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A GUIDE TO

SECURITY



COMFORT



ECONOMY



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FOREWORD



AS YOU PROCEED with plans for your new home you will become increasingly aware of the fact that regardless of the type of house you are constructing, or its cost or location, there are certain fundamental requirements against which you should weigh each idea, service or material.

The most important of these are:

SECURITY against loss of life or property by fire; against faulty materials and construction; against the attacks of weather.

COMFORT through floor plan and room arrangement which meet the needs of your family; through architecture and decoration which satisfy your personal tastes; through proper insulation; through a modern

heating system; through labor-saving equipment.

ECONOMY of building costs; financing; heating; upkeep and repair.

We feel quite sure that when you build or buy a home you will be very definite in your demand for the utmost in **SECURITY**, **COMFORT**, **ECONOMY**. But unless you are an expert in building you probably do not know all the things you must do to get them, nor remember all of the details for which you should watch out.

We have prepared this book to provide information to help you make an intelligent choice of architecture, construction, and materials—to help you protect what for most families is a first experience and is probably the major investment of a lifetime.

WHETHER TO BUILD OR BUY...

THERE ARE TWO WAYS for you to acquire a home—you can build to suit your needs, or you can buy a home already built. Which you choose depends on whether you want to immerse yourself in all the details of planning and construction, or whether you prefer to leave them to others.

But whether you build or buy, the rules for a sound investment are the same. In the former case, you must watch to see that you put into the home you build the elements which result in security, comfort and economy. In the latter, you should check carefully to make sure that they have not been slighted by the one from whom you purchase.

If you prefer to build, there are three people whom you should select carefully and then lean on heavily for advice and experience.

They are the Architect, Builder and Building Materials Dealer. They can be of invaluable aid to you.

The acquisition of a home is a decision that must be made by each family in the light of its particular requirements. No two families are exactly alike, and neither are two pieces of property nor the building codes of two towns. Furthermore, no one has yet been able to figure out a better or more economical way to put a house together than to assemble it on the site.

That is why we have architects who plan houses to fit the needs of the individual; builders who erect them to the owner's wishes and his community's building laws—dealers who carry materials in their warehouses so that you can get them when you need them. Each of these factors—architect, builder and dealer—can give valuable aid in your home building.



YOU NEED AN ARCHITECT

PEOPLE TOO FREQUENTLY fail to appreciate the value of an architect; they too often feel that by getting along without one they "save" the amount of his fee.

This is a serious error, for in most cases an architect's fee, rather than being an extra cost, is paid out of the money he saves you.

In the first place, experience shows that architect planned and supervised houses are more saleable, and bring a better price. They definitely have greater value.

This is true because your architect is much more than an artist who draws plans and pretty pictures. He is an expert on construction, on materials and their erection as well as on planning and design.

Under his direction you will get the floor plans and room arrangements which fit your family's way of living. You will get exterior appearance that is architecturally right and pleasing to the eye.

Your architect will give you sound advice on materials, impartially steering you away from both the extravagant and shoddy. As homes have the habit of outgrowing their budgets, he will guide your pruning operations

so that you will not sacrifice any of the really essential elements of sound construction.

We suggest that the agreement with the architect include his supervision of construction. Thus you will be sure that his specifications are carefully followed.

In many communities, architects are grouping together to provide plan and supervisory service, for small homes, at reduced costs. It will pay you to find out whether such a plan is effective in your community.

We suggest that when you and your architect decide on materials, you definitely request them by brand name and type, establishing them as the standard against which any other make of product must be measured. In this way you will be sure of getting the products you want to use.

Finally, remember that you can rely on your architect's skill and experience to lead you around many pitfalls and obstacles, for he has done many times that which you may be undertaking for the first time. Considering the mistakes you may make without him, your architect may save you, in actual cash, considerably more than his fee, and your finished home will be a better investment because of his supervision.



SELECTING A BUILDER

THE BUILDER is the master craftsman under whose direction the sticks and stones which are piled on your property take shape and order. There are many specialized trades involved in erecting a house—carpenters, lathers, plasterers, plumbers, heating contractors, painters and electricians.

The best way for you to deal with them is to place your building operation under the direction of a general contractor, who takes over the entire job and makes all arrangements with the various trades. This centralizes responsibility in one experienced man who undertakes to turn over the house to you completely finished.

You should choose your builder carefully, for he is the general manager of an important undertaking. The best procedure is to ask your architect, dealer, building inspector and banker to recommend half a dozen names to you. From these, select three that appear near the

top in each man's recommendation and take your plans and specifications to them for bids. Then, double check the three for financial reliability, construction ability and general reputation.

Your local bank, credit agency and dealers are the best advisers on the first point. For the second and third add your architect, local building inspector and several people for whom the contractor has done work.

If everything else is equal, give the job to the man with the lowest bid—but hesitate if the low bid accompanies an unsteady financial footing and uncertain reputation, for then you run the risk of losing many dollars for the sake of saving a few. Look with suspicion on an extremely low offer, for every man in business must make a profit and if a man has figured too low he generally cuts enough corners to make up his loss at your expense.



Your Building Material Dealer

As your home is assembled locally, it is necessary to have available a local stock of all the parts which go into it. That is the basic function of your lumber and building material dealer.

In selecting him, there are two factors you should carefully consider. The first is the quality of the materials he handles; the second is the service he is able to give you.

You need quality materials properly to execute your architect's plan, and no builder can do a good job with inferior products. Your lumber, for example, should be properly dimensioned and kiln dried, and you should be sure of getting the grade specified.

Your best assurance is to patronize a dealer who features nationally known, trademarked materials. The quality protection behind the USG label, for example, on lath, plaster, roofing, insulation and paint is of real value to you and you need pay no more for it than for less well known brands.

A complete stock is the first service requirement to place on a dealer. Delays in delivery to the job will quickly run up your costs, because they interfere with your builder's schedule and keep workmen idle. This applies not only to major items, such as lumber, lath or plaster, but also to the unexpected, small orders that frequently come up during the building of a house. Your builder may quickly need an elbow, or some flue lining, or a small order of Keene's Cement. Patronizing a dealer known for his *complete* stock will help greatly to make your building job smoother, less costly.

It is also wise to choose a dealer whose volume of business is active enough to keep his stock fresh. This is

important, because certain materials lose some of their quality if kept in storage too long.

But the services of the modern, progressive material dealers extend beyond the products they stock. Many of them are literally "building headquarters"—the place where you can get advice on the best architect or builder to use, on the best way to finance your home. Such dealers will handle innumerable details for you to make your building job easier, and your home a sound investment.

And remember the old adage "Birds of a feather flock together" when selecting your dealer, for if he is a top ranking building material dealer, well thought of in the community, with all the services a modern dealer should offer, you will find that the better architects, the most reliable builders do business with him.



Attractive offices and modern display rooms such as those of the Deering Lumber Company, Melrose, Massachusetts, provide a complete home service for modern home builders.





BUYING A HOUSE

THE EASIEST, least complicated way to acquire a new house is to buy it. You may buy an old house which suits your purpose, in which case you should work through a reliable realtor. Or you may purchase a new house that has been built for sale, or that may be built expressly to your order. In either case, remember that all the things which apply to building your own home apply equally to a home that you purchase.

The Operative Builder

The men who make a business of building new homes for sale are known as "operative builders." An operative builder either owns a tract of land which he subdivides into lots, or he may build on property already improved. He generally erects a group of model or exhibit homes from which you may make your selection. Or if you do not find anything in this stock that pleases you he will build a house that incorporates your ideas as to design and plan.

Today the majority of operative builders employ architectural aid in planning their homes, and many of the larger ones have their own architectural departments.

When you purchase a home from an operative builder, the price should be complete, and without extras. It

should include your pro rata share of the community's utility and sewage lines and you should be guaranteed against future assessments for these purposes.

Most builders today include the garage in the quotation they make you, but it is wise to check on this point as they occasionally do not, particularly in small homes.

When buying a house your first decision, of course, is to decide on the part of town or the suburb in which you want to live. Then your problem is to find the builder in that section whose houses meet your requirements. In selecting a builder, check his financial responsibility with care as one with insufficient capital may not be able to go through with the plans which attract you to his community. Find out about restrictions which he has set up. They are your protection against practices and intrusions which might depreciate the value of your property. (See pages 10 and 11 for further details on this point.)

It is also well to look carefully at the way in which he is laying out his land. Is he making the most of its possibilities, is he providing real protection to children by reducing through streets to a minimum? Is he placing his houses so that they do not crowd each other, but show off their best features and give you plenty of privacy?

The best way to find out about any builder is to talk with some of the people who have already bought houses from him, for they will have paid for their opinions with their own money and experiences.

Buying a house from a builder is a little like buying an automobile, in the sense that you are getting a finished, ready-made product which you did not assemble yourself and many of whose parts you cannot see. You have confidence in the automobile because of its maker's name and the experience you and your friends have had with his product. You can safely have the same confidence in your builder if you choose him wisely.



The three photographs on this page illustrate the attractive homes and complete building service provided by today's operative builders. Upper right shows a street in one of the J. C. Nichols Company's developments, Kansas City, Missouri. The above illustrates attractive small homes built on Maple Hill Farms in northern New Jersey. The picture (right) shows the well planned entrance and one of the homes in Colonial Village, Wilmot Woods, developed by Haring and Blumenthal, New Rochelle, N. Y.



SELECTING YOUR PROPERTY

YOU WILL WANT TO STUDY carefully the neighborhood in which you plan to build or buy, and the specific lot on which your house is to be situated.

You cannot decide on plan or design without knowing the conditions of the site. A house on the side of a hill dictates a different layout from one built on a flat lot; a house designed for a 125-foot lot might not fit on a 75-foot lot; orientation depends upon the lot location. It also makes a major difference in planning whether yours is a corner or an inside lot, and whether it faces north, south, east or west.

The first thing to decide when buying land is how much to pay for it. If you are building in an urban community

on improved property (pavements, sidewalks, utilities, sewers installed and paid for) your land should not cost more than 10% to 15% of your total building budget. That is, if you spend \$10,000 on house and lot, you can spend \$1,000 to \$1,500 on the land alone, while if your total budget is \$5,000, the lot should not represent more than \$500. In a suburban or country community where improvements have not yet been installed and property owners must pay for them in the future you should not invest more than 5% to 10% of your total building costs in land.

Your principal concerns about the lot itself are:

1. *Its outlook:* make sure you like what you are going to look at the years you will be living in the house.

2. *The adjoining properties:* if they're vacant, investigate the possibility of acquiring them later, possibly getting an option from the owner not to sell without giving you first chance.

3. *Your next door neighbors:* if the properties adjoining are occupied, be sure to get some information about the people. Whether you want it so or not, usually they're the next closest thing to your own family.

4. *Soil conditions:* rock is expensive to excavate, and water is expensive to keep out of the house. Find out if the neighbors have trouble with water in the basement and if any doubt exists make a test boring.

No property, however desirable in itself, is worth the price without complementary desirability of the general neighborhood, judged against the following factors:

The General Neighborhood

1. Is the property in a section of town which is considered a "good address"?
2. Is transportation convenient, frequent and inexpensive?
3. Is the approach through a pleasant and safe section of the city?
4. Are good local stores within convenient distance?
5. Are schools within convenient walking distance and if not, is transportation available?
6. Do the schools have a good educational standing and are the children who attend a type that would be congenial to your own?
7. Are churches, YMCA or similar centers of social and religious activity convenient? Are parks and recreation areas provided?
8. Does the general neighborhood look "down at heel" or are the houses well painted and the lawns and gardens well kept? Pride of ownership is a good indication that the neighborhood is on the "up" rather than on the "down hill" side of the cycle.

The Immediate Neighborhood

9. Are the paving, curbs and walks well constructed and maintained? Have street trees been planted?
10. Are connections to sanitary and storm water sewers and gas mains immediately available? Are they placed at a usable grade?
11. Are the street improvements, sewer and water lines paid for by the developer and included in the price of your property or will you be assessed over a period of years to cover their cost?

12. Has the city, township or county accepted the streets and utilities and will they properly maintain them, and if not, what assurance is there that the developer will do so?

13. Is the property being sold from a plat that has been recorded and approved by the planning and zoning boards? If not, it is probable that the developer has plans which are not for the best interests of the community.



These two homes illustrate how careful restrictions protect property values. Although built in 1893 at a cost of \$6500, the home above is worth \$10,000 today. The house illustrated below was also built in 1893, costing \$8500, and was sold in 1933, forty years later, for \$11,000. Both homes are in one of the Roland Park Company developments in Baltimore and are protected by one of the finest sets of property restrictions and zoning regulations in the country.



14. Are there protective restrictions in the deed controlling the manner in which the land must be used and the character of the development? Do these and similar protective restrictions apply to all lots in the immediate area? If they do not, your neighbor might be able to keep pigs, build shacks on his lot, use his property for a junk yard or store. Protective restrictions that are suitable should cover the following matters:

1. Limit the use of the land to single family homes only, except in those areas where store groups, churches, parks, etc., have been definitely planned.

2. Control the placement of the building on the lot by proper setback and side yard regulations.
 3. Establish the minimum size lot on which a home may be built.
 4. Control the design of buildings to prevent architectural atrocities that would ruin the desirability of the neighborhood.
 5. Control the minimum cost of homes forbidding the building of homes costing less than a specified amount, or containing less than a minimum cubical content.
 6. Prohibit nuisances and undesirable uses such as stables, chicken yards, temporary dwellings and outside toilets.
 7. The restrictions should run for at least 25 years subject to revision at the end of that period by vote of the property owners.
15. Is the lot well drained and is there good topsoil? In some cases it may have been stripped and sold.
 16. Is there dangerous fast traffic on "your" street or have streets been planned to encourage a minimum of through traffic?
 17. When the side yard requirements are considered, is the lot wide enough for the type of home you contemplate? The trend today is toward wider lots and attached garages.
 18. Is the lot of sufficient depth to provide the garden and play space you desire? Front porches are out today. In modern living the rear garden is an outdoor living room.
 19. Are the side lot lines at right angles to the street line, or do they intersect at such an acute angle that your home cannot be built parallel to the street line without overlooking your neighbor's land?
 20. Has provision been made for the collection of rubbish and garbage? Does the postman deliver or must you walk several blocks to an R. F. D. box?
 21. Finally, is the area one in which maximum loans can be secured on the type of home, price range and style you contemplate building?

• • •

Is the Property Acceptable for FHA Insurance?

Whether you expect to finance with an FHA insured mortgage or not, find out whether a house built on the property you desire would be acceptable for such insurance. Do this by inquiring of your local FHA office, or of a savings and loan association or similar institution eligible to lend money on FHA insured mortgages. The FHA has developed an excellent appraisal system and their rejection of a location is a serious warning. Finally, be sure you have clear title before you buy. A title search by an abstract or mortgage company is highly desirable, as is an accurate survey to determine exactly how many feet and inches your land extends in each direction. It is also wise to consider taking out a title guaranty policy on your property.

FINANCING YOUR HOME



THE TOTAL COST of your house and lot should lie somewhere between one and one-half and three times your annual income. It can safely be near the "three-time" limit if your cash reserve is such that you can make a substantial down payment, or if you already own the land. If the best you can manage is the minimum down payment, hold your expenditure close to the more conservative ratio.

Because of the amount involved in the purchase of the average home, comparatively few people have enough ready money to pay cash for it, or if they have, they hesitate to freeze it in a single asset. For these reasons, they usually make a down payment and defer the balance over a period of years.

The financing of your home, therefore, is a very important matter; in fact there is no phase of home building with which you should be more familiar. A difference of one-half of one percent in the interest on a mortgage will amount to several hundred dollars in final cost. Or if your financing plan is not suited to income, it may result in a continual embarrassment, ending possibly in the greater embarrassment of losing the house entirely.

Money for home financing is usually secured from one of the following sources—savings and loan institutions, savings banks (and in some cities, commercial banks as well), life insurance companies, and mortgage companies.

How Financing Institutions Can Help You

You will not be able to complete your financial dealings until you have definitely purchased your land, completed your plans and specifications, and acquired at least a tentative estimate of costs. This, however, does not mean you should avoid all contact with lending organizations until then. Many prospective owners find it helpful to discuss their plans with a competent financing institution so as to obtain advice on every factor which will have a bearing on the loan desired. This advice can be helpful at all stages and it is particularly valuable regarding property values and the type of planning which will be well received when you apply for your loan.

When the time comes you can expect a careful inspection of your financial affairs. More people are refused mortgage loans because they are poor credit risks than for any other reason. Here is a rating chart that will help you decide how good a personal credit risk you are:

FEATURE	PERCENTAGE VALUE	YOUR RATING
Character.....	30
Attitude towards obligations.	15
Ability to pay.....	25
Prospects for future.....	15
Business history.....	10
Associates.....	5
TOTAL.....	100	

If you've scored yourself less than 75%, you probably have some fence mending to do

Two Main Types of Mortgages

There are only two types of mortgages worth considering—straight term mortgages, and amortizing or “automatically reducing” mortgages.

The former run for a definite period, generally three to five years. Sometimes there are provisions permitting the repayment of part of the principal, and consequent reduction of interest charges, on specified annual or semi-annual dates. When the mortgage falls due you either pay it off completely, or apply for a renewal which may or may not involve the repayment of part of the principal still outstanding. One disadvantage of the straight mortgage is that it does not provide for systematic repayment. This, coupled with the usual need for secondary financing, makes this a more expensive way to buy a home.

As the straight first mortgage is generally written for fifty to sixty percent of the total cost of the house and lot, the builder often needs additional financing. This calls for a second mortgage which is a junior lien on the property, and therefore represents a greater risk to the second mortgagee. The cost of second mortgage financing is always quite high.

Advantages of the Self-Reducing Mortgage

The high costs and risks to both lender and borrower in straight mortgage financing have tended to popularize the amortized or self-reducing mortgage. The establishment of FHA gave a tremendous stimulus to this type of home financing.

Under the FHA the government *does not* loan money, but the FHA does insure mortgages made on homes by banks, savings and loan associations and other agencies, providing their procedure and the property on which

the loans are made meet FHA requirements. Note—this insurance is protection for the mortgage holder. It acts as an incentive to him to purchase mortgages in which the mortgagor has an equity of 20% or less. The maximum mortgage eligible for FHA insurance is 90% of the total FHA valuation of house and lot, provided the total is \$6000 or less. In case of houses costing, with land, more than \$6000, the mortgage may represent 90% of the first \$6000 and 80% of the balance.

You have no advance assurance that the maximum terms will be granted in your case, for FHA has discretionary powers to accept any individual mortgage for insurance at any percentage below these maximum terms. Therefore, you may be able to get only a mortgage representing 65%, 70% or 75% of your contemplated total cost. For this reason, it is desirable to make application for a mortgage loan just as quickly as you can get your plans in shape to do so.

Interest on FHA insured loans is limited by law to 4½% plus ½% insurance. Your monthly payments include not only installments on interest, insurance and principal but also one-twelfth of the annual taxes and fire insurance on the house. Thus all the carrying charges are conveniently lumped in one monthly payment.

Broadly speaking, the average monthly carrying charge under the 20-year FHA plan (including interest, reduction of the loan, mortgage insurance, taxes and fire insurance) amounts to just under 1 per cent of the amount of the mortgage. For instance, on a \$5000 house including land, with a \$4500 mortgage on it, the monthly carrying charge would amount to about \$39 a month. On a \$7500 house, including land, with a \$6600 mortgage on it, the monthly carrying charge would be about \$63 a month. On a \$12,000 property with a \$9600 mortgage, the monthly charge would be about \$92.

You do not necessarily require FHA insurance to receive the benefits of an amortizing mortgage. Many savings and loan associations, insurance companies and other lending organizations feel they do not need these insurance provisions. They generally advance less than the maximum allowed under the FHA plan, but their costs are sometimes a little lower and they have other advantages which appeal to many people.

Aside from the financing costs we have previously enumerated, there are additional costs. Usually, there is interest to be paid on the temporary building loan—that is the loan required to finance the building before completion. Sometimes this type of loan is made by the institution which issues the permanent mortgage, and sometimes the loan is made by a commercial bank or other local source. The interest rate is usually about 5 per cent, and the term of the loan is for the duration of construction.

In addition there are the so-called "closing charges" or mortgage costs which include the cost of a title search, a recording fee, an appraisal fee, and an initial service charge of the mortgagee. These costs vary greatly, running anywhere from 1½ to 3 per cent of the amount of the mortgage.

In most communities your building material dealer will guide you through the financing details. Many are able to provide financing through their own connections, or they can assist you with their experienced advice.

A Word About Contract Documents and Lien Laws

If you procure your financing from a lending agency insuring through FHA, you will be required to furnish a copy of your agreement with your contractor, a complete set of specifications and a set of working drawings.

Whether you obtain FHA insured financing or not, you should have these documents properly made out and signed. They are a protection to home owner, mortgagee and builder, for they set out clearly, simply and precisely what the contractor is expected to provide and how the house is to be built. Such a record avoids disputes, disappointments and litigation.

We advise every prospective home builder to write the Federal Housing Administration, Washington, D. C. for a copy of Technical Bulletin, No. 3. It explains in detail the need for these documents and shows by actual example how they should be drawn up and prepared.

It is also well, we believe, to draw your attention to the matter of lien laws. These vary in their provisions and

details in practically every state. Almost any financial institution in your community is in a position to furnish sound advice on lien laws. As an additional precaution it is often advisable to consult your lawyer who will also know how these laws operate.

The purpose of a lien law is to protect workmen and building material dealers from default on the part of the contractors. The laws provide that in the event of such default the owner can be forced to make good on it, paying the amount still owed workmen or dealer even if he has already paid the contractor these sums.

You can protect yourself against this unhappy eventuality by requesting from your general contractor an itemized accounting and receipts for the disbursements which your payments cover and an affidavit that there are no outstanding obligations. Many financial institutions are equipped to handle these details for you, thereby saving you considerable time. Some of them have a complete service available and can greatly assist you to bring all details to a prompt conclusion.

Reliable builders are good business men who will protect their good name as well as your pocketbook.

Most mortgage companies, in making payment to you follow the schedule shown below. It is a good one for you to use when paying your contractor:

- 7% on completion of cellar.
- 23% when the building is wind and water-tight.
- 30% when plumbing, heating, electrical roughing is completed and building is plastered.
- 25% when building is substantially completed.
- 15% when building is finally completed.



Perry, Shaw & Hepburn, Architects, Boston.

FROM COLONIAL

TO MODERN



Perkins, Wheeler & Will, Architects, Chicago.

THE CHOICE IS YOURS . . .

WHAT ARCHITECTURAL STYLE should your home be? The answer to this question depends on several things. For example, it depends on the climate in which you live, for a style suited to the moderate temperatures and brilliant sunshine of Miami might be out of place in Minneapolis.

It also depends on your land, for a house suited to flat ground might look incongruous perched on a hillside. It depends on the layout of your rooms, whether you live formally or informally, and what kind of houses your neighbors have, because some types of architecture, like some colors, clash with one another.

The really important thing to remember about architectural style is that to be architecturally sound your home should be planned from the inside out. You and your architect should start with the interior arrangement of rooms, in relation to their use, to their view, and to one another.

There are several architectural styles popular in this country today. Some of them, like Cape Cod, stem from our own early history. Others, like French Provincial or Spanish, we have borrowed from abroad. Then there is a style, called Modern, which has grown up both here and in Europe during recent years as the result of a

search for an architecture that fits our modern tempo of living, that uses modern materials to their best advantage, and it is producing some very attractive and livable homes.

In thinking about architecture, however, it is well not to set too much stock on labels, for good architecture is not static, it won't stay labeled, it moves with the times, it becomes modern.

For example, the Cape Cod homes of today resemble their ancestors, but they are vastly different at the same time. Some of them have attached garages which no one building in Provincetown during the 17th century needed. They have air conditioning and they are much roomier, too. And you will find houses in which several styles are skillfully blended into something that is beautiful, new and difficult to classify.

On the following pages we illustrate fine examples of present-day American residential architecture. They are different in type and in style, as well as in price. Although for convenience they are tagged with the familiar labels "Colonial", "Dutch Colonial", "Cape Cod", "Modern", and so on, they are really more than that. They are the adaptation of these styles to the present-day needs of the families who live in them.



NEW ENGLAND COLONIAL

The characteristic New England Colonial house is square or oblong in mass, with sidewalls of clapboards, shingles or shiplap and a rather steep shingled roof. It is often built around a large central chimney stack. Large windows, divided into small panes, placed regularly give the dignity of balance. This home was designed by Cameron Clark, Architect, New York.



NORTHWEST AMERICAN



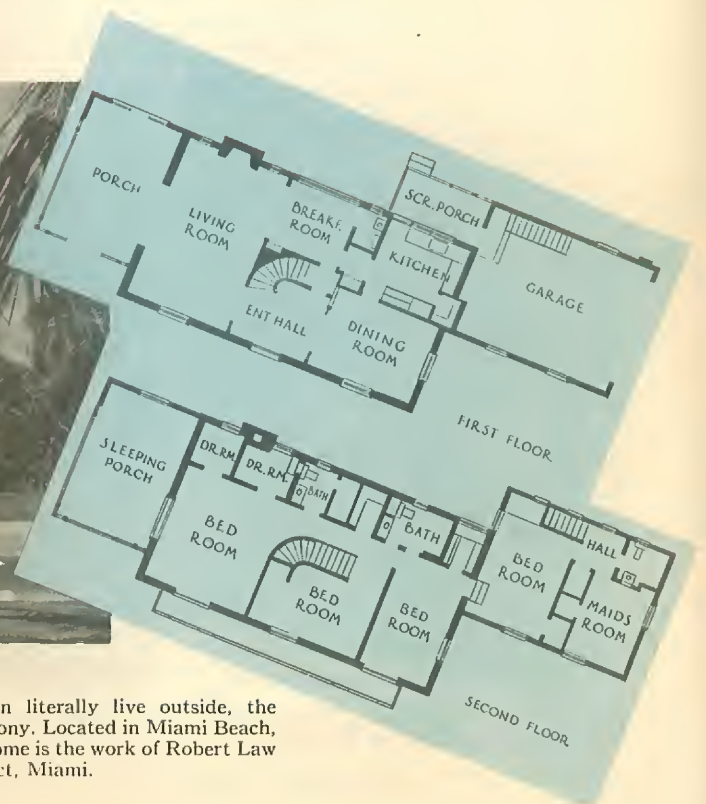
Stemming from Colonial tradition this home in Lake Oswego, Ore., has been adapted to the locale and age in which it is built. Its design is admirably suited to the background of trees and

natural setting. Note the two-car garage, beneath a large recreation room, equipped with bunks to double as guest rooms with bath adjoining. Glenn Stanton, Architect, Portland, Ore.



CALIFORNIA

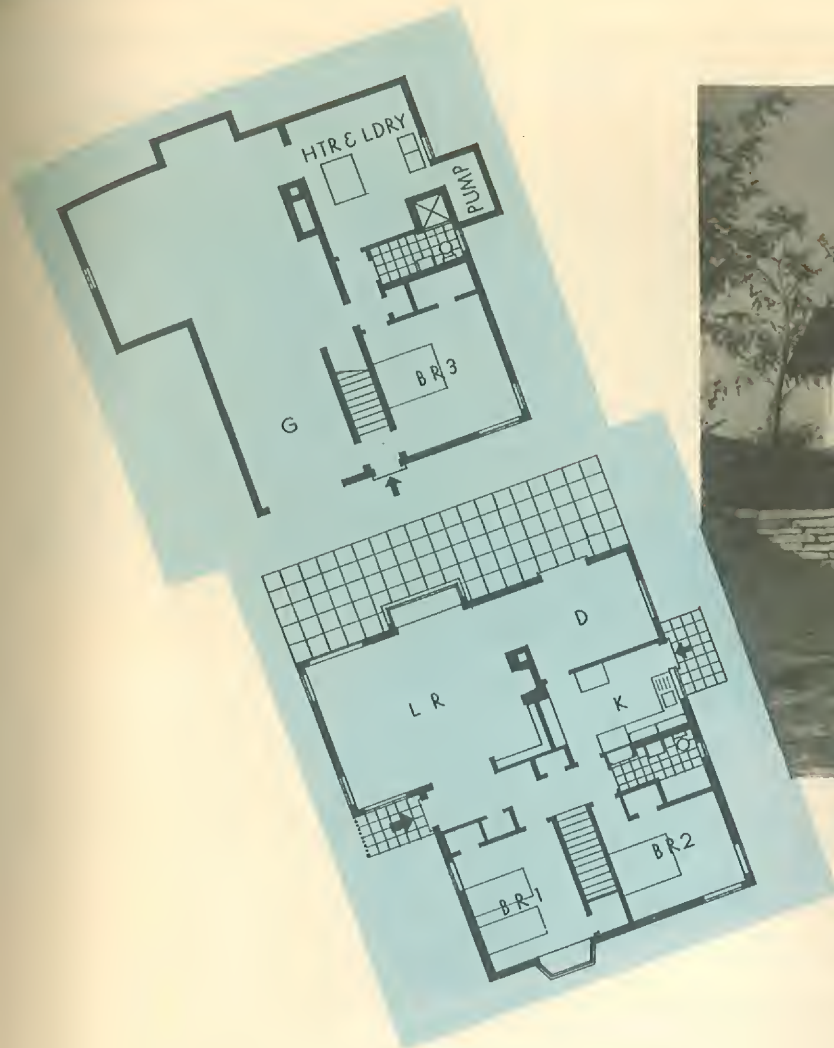
California has developed a distinctive architecture which blends features from New England Colonial, Spanish and the Modern influence. These houses are especially adapted to a sunny climate and are planned for a maximum of outdoor living. This home, located in Westwood, was designed by H. Roy Kelley, Architect, Los Angeles.



MODERN FLORIDA

Interesting things happen to the Colonial tradition when it travels south to Miami in the 20th Century. Notice the generous windows and doors, the large portion of the

house that can literally live outside, the attractive balcony. Located in Miami Beach, Florida, this home is the work of Robert Law Weed, Architect, Miami.



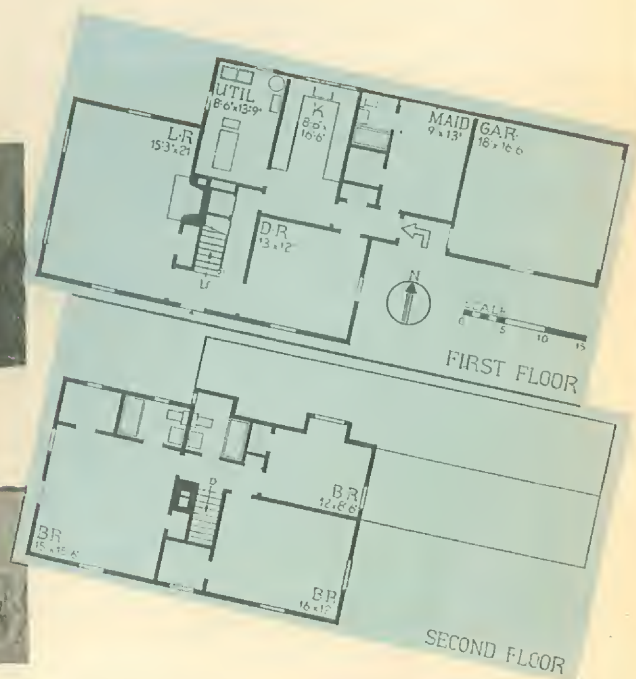
Simplicity and functional design are two major characteristics of Modern architecture. Here is a house in which they are most pleasingly achieved. Notice the excellent proportions of the building and the effective contrast between white walls and dark doors, roofs and window areas. George Fred Keck, Chicago, was the architect.

MODERN



This home is an excellent example of New England Colonial architecture. The white shingle sidewalls and contrasting window shutters are typical of these houses, as is the

central hall with living room on one side, dining room on the other. Modern touches are the utility room off the kitchen, attached garage. Jan Vink, Architect, Darien, Conn.

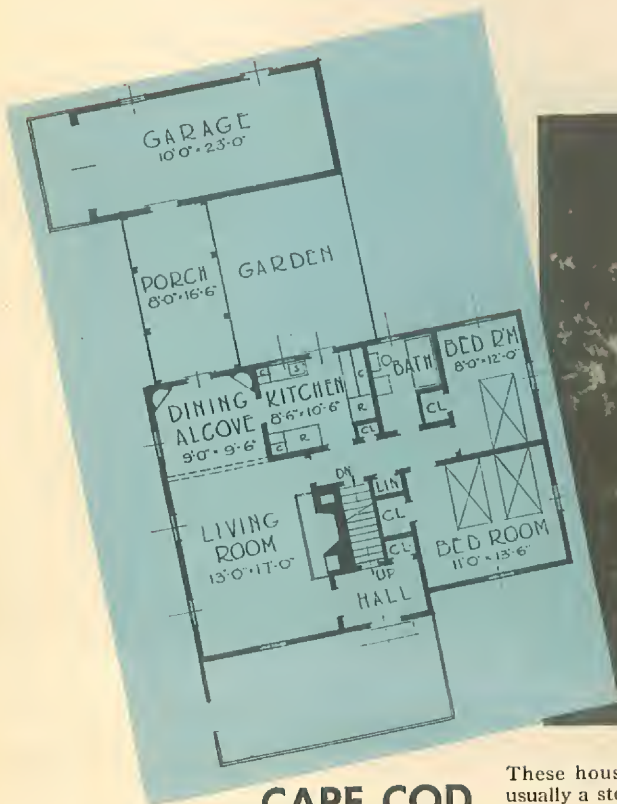


COLONIAL



MONTEREY

Monterey architecture is a happy marriage of Colonial and Spanish which took place between 1830 and 1840. Typical are the overhanging balcony; inside chimney; well proportioned double-hung windows with shutters either inside or outside. Original houses were built of adobe bricks, present day generally use common whitewashed brick or stucco. This home in Santa Cruz, California, is the work of William Wilson Wurster, Architect, San Francisco.



CAPE COD

These houses are built close to the ground, usually a story or story and a half high. Notice the low front elevation, balanced proportions, central chimney, centered entrance door with

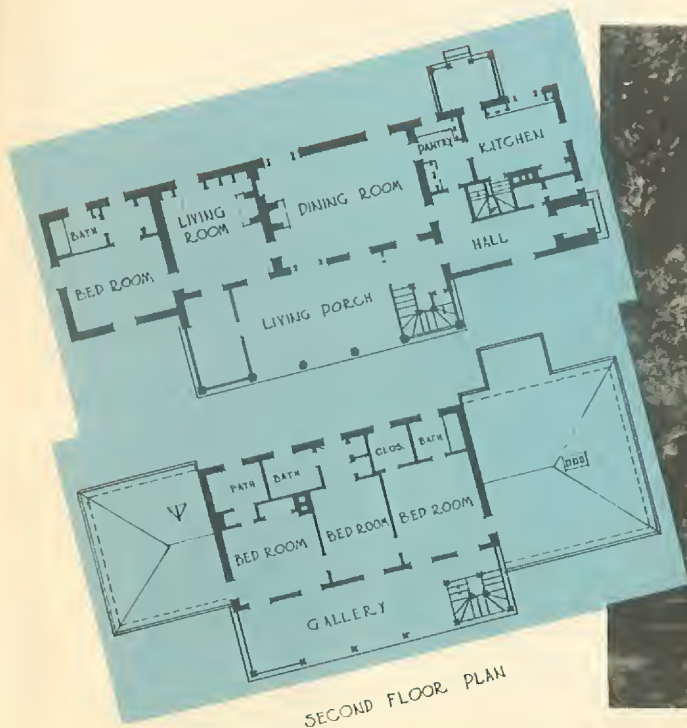


windows to the same height. Noteworthy is the debt way in which the garage, unknown to early Cape Codders, has been added to this house designed by Royal Barry Wills, Architect, Boston.



Here is an excellent example of the Dutch Colonial style of which the natural habitat is northern New Jersey, Long Island, Staten Island, and parts of Upstate New York. Notice the excellent roof line, dormers well subordinated to the whole mass and well placed windows. The home was designed by Lewis E. Welsh, Architect, New York City.

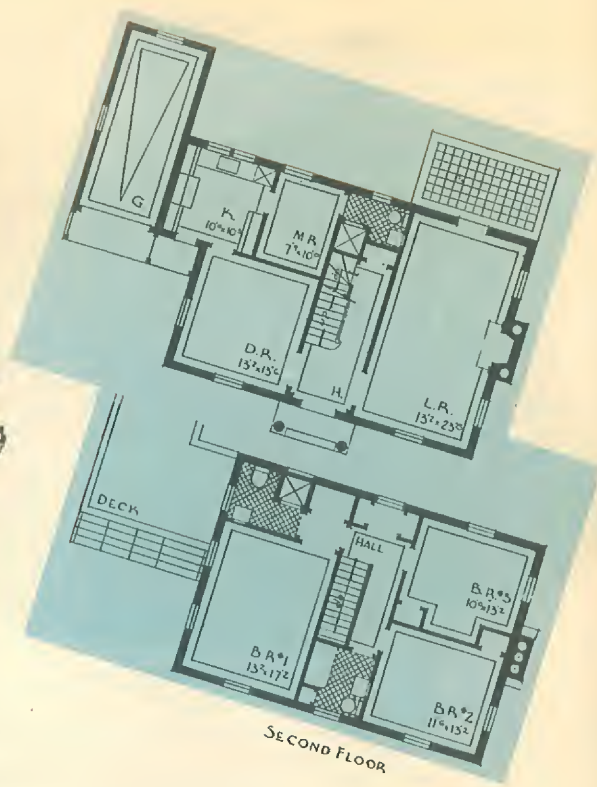
DUTCH COLONIAL



Grace, dignity and comfort characterize Southern Colonial architecture as this home in Pass Christian, Mississippi, illustrates. Its architect was Richard Koch, New Orleans.

The "Living Porch" opens directly into both inside living room and dining room; note the pillars on the ground floor and the smaller ones on the gallery above it.

SOUTHERN COLONIAL



GEORGIAN

Symmetry, proportion and formality are distinguishing features of Georgian houses, illustrated by the excellent example shown here. The end chimney, central hall running through

the structure from front to rear and the pedimented doorway are all characteristic of this gracious style. This home was designed by Dwight James Baum, Architect, New York.



PENNSYLVANIA FARMHOUSE

Pennsylvania produced a charming branch of the Colonial family, of which this house in Erwinna, Pa., designed by Emil J. Szendy, Architect, New York City, is an excellent

example. Characteristic are the native stone walls, the two dormers, slate roof, white shutters, entrance porch. The open side porch is a modern and very pleasant innovation.

THE ENTRANCE AREA



A well planned entrance hall designed by Jerome Robert Cerny, Architect, Lake Forest, Ill. Living room, dining room, garage and service area, as well as upstairs and basement, should be accessible to this area.

AN ENTRANCE HALL is a necessity for everyday living. It helps keep draughts out of the living room. It provides space for the coat closet which is a "must" item in your planning, and a powder room or downstairs lavatory which is a desirable convenience. It provides a convenient passage to various parts of the house. It gives you an opportunity to open the door to callers without having them step directly into the living room—a courtesy to your friends which helps maintain the privacy of your home.

The entrance area has two major requirements: To be shielded and separated from rooms in which the family normally congregates, and—accessibility.

If you employ a maid, she should be able to reach the entrance from her room or the kitchen without having to go through the living room. It should be reached

with equal ease from dining room, upstairs or basement.

The entrance hall is the proper location for the clothes closet, which is used whenever the front door opens.

The coat closet should accommodate during the seasons when they are used, the coats, hats, umbrellas, rubbers, overshoes, walking sticks or other outdoor apparel of every member of the family, each hung or supported to protect its shape and so it can be easily found.

The coat closet should also have room for the overclothing of a normal number of guests, caring for them as properly as the hats and coats of the family.

The size of the closet is determined by the number of items it will be required to hold. The minimum closet is 2'x3', and accommodates on hangers about 10 coats. A medium sized closet, 2'x6', holds about 16 coats. These dimensions will help in checking your plans to make sure you provide space that is adequate.

There should be an overhead light. A mirror is also desirable, unless there is one in the hall or powder room nearby.

The closet may be larger to provide room for skis, skates, tennis racquets, golf sticks and other sports equipment. But the latter are preferably stored in a separate sports equipment closet.



Lack of an entrance hall opens the heart of your home to every chance visitor, as well as being an inconvenience to both family and guests.

PLANNING THE LIVING AND DINING ROOM



Living room of a home designed by Perkins, Wheeler & Will, Architects, Chicago.

THE LIVING ROOM is the center of family life. It is also the center of social life, where friends and guests are met and entertained. Performing as it does this dual purpose, the living room should be planned accordingly. You will want it intimate and comfortable enough for your family, yet sufficiently dignified for more formal occasions.

What type of room best fulfills this double need? There are two answers. One planning school favors the "dead-end" room, with a minimum number of doors, and no suggestion that the room is merely a passageway to another room. The other, disciples of open planning favor a living room that opens up into the dining room, or onto a terrace—a room seemingly without boundaries. Each type has its advantages, one satisfying those who prefer security and intimacy; the latter appealing to those who like freedom and openness.

Before discussing the specific points of living room planning, one must first choose between the combination

living-dining room and a dining room completely separate from the living room. Probably no element in home planning is so subject to discussion at the present time.

Those who favor the combined living and dining room base their arguments on these points: There is a feeling of greater size in a small house if the two areas are thrown together to make one large room; it makes possible the use of the dining area for purposes other than eating, and so is more economical of space. It gives you more space for dining when you want to entertain a large number of people.

On the other hand, these are effective arguments against combining the living and dining room: It is often difficult to plan the dining area with sufficient privacy. It robs dining and entertaining of some of the formality which many people enjoy and mothers often claim it is harder to control children's table manners when they eat in the combined space. Often it makes the living room harder to furnish.

It is for you to decide which is actually better suited to your family's living habits. Don't shy away from the combination living-dining room simply because tradition is against it. But don't be persuaded to fall in with this trend if a formal dining room is really indispensable to your family's social life. The combination room frequently results in more compact planning, and hence greater economy. Discuss the relative merits with your architect before making a final decision. Should you decide on the living-dining room, it is well to provide a breakfast nook where the family may eat informally.

The size and shape of your living room should not be settled arbitrarily. Consider, for instance, what you might be able to have if you could be happy with a small living room. It might be possible to include a den in the first floor plan, possibly a lavatory if one is not already provided. Granted that a large living room is desirable, just be sure that the extra footage could not be more profitably used for some other convenience.

Before you decide upon any particular size or shape, it will be well to plan your furniture arrangement. Sofas that are too large to fit between windows; no place for a favorite incidental table; difficulty in making the right furniture groupings—these are the inevitable results of living rooms designed without regard to the furniture you already have or plan to buy.

Common Living Room Sizes

An oblong living room usually fits better into the average house than a square one, and it is generally easier to furnish. Give some thought, too, to the possibility of an L-shaped room. Besides lending architectural interest, it is often convenient when more than one group activity is going on in the room at the same time. Common sizes for living rooms in smaller homes are 12' to 18' wide and 16' to 30' long. The proportions of 3 to 4 or 4 to 5 usually result in pleasing room sizes.

A fireplace in the living room is essential to many people. Apart from its value as a source of warmth, it is both a social and a decorative focal point. It is best located on either of the long sides of the living rooms. If you have a fireplace, avoid placing doors to the porch on either side of it. This both detracts from the fireplace and makes for heavy traffic in what should be a secluded center. A wide entrance directly opposite the fireplace also reduces its privacy, for it opens the heart of the room to the chance caller.

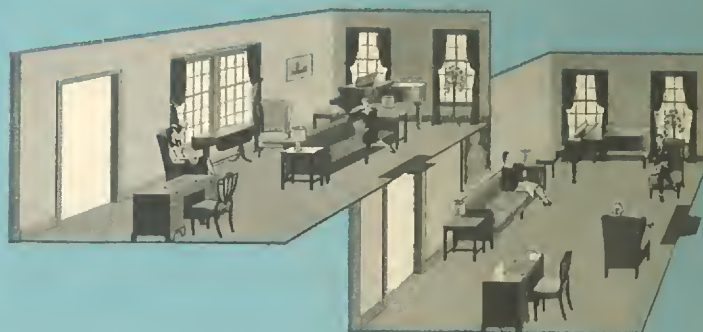
As to windows and wall spaces of the room, give yourself absolute freedom of plan without too much regard to the effect on the exterior. Irregular window and door arrangements can be incorporated into any style of architecture. If you want a large window looking out over a particularly handsome scene, by all means have



BAD

GOOD

If you have a fireplace, avoid placing doors on either side of it. This both detracts from the fireplace and makes for heavy traffic in what should be a secluded center.



BAD

GOOD

You need unbroken wall space for attractive arrangement of furniture, and to enable you to group your pieces of furniture logically and attractively. Notice how the large window in the illustration at the left interferes with the furniture arrangement in this room.



BAD

GOOD

If possible, avoid a wide entrance directly opposite the fireplace. It reduces its privacy, for it opens the heart of the room to the chance caller.



BAD

GOOD

Plan your living room so that you can arrange furniture to provide groupings which permit easy natural conversation, and at the same time allows any member of a group who wishes to retire from the general conversation to do so without being unduly disturbed.



BAD

GOOD

You will find a room is more comfortable if your window sills are below the eye level of a person seated. Such an arrangement permits a clear, unobstructed view out-of-doors.



This illustrates the advantage of having the dining room adjacent to the living room with a connecting door between them. You thus get two rooms which may be thrown into one when you are entertaining.

it. If you want corner windows, by all means have them. Naturally, windows should be placed to provide the best views, as well as to admit plenty of light and air. In thinking of windows, however, don't overlook the fact that what remains is wall space—and unbroken wall spaces are genuine assets in planning your furniture arrangements. Incidentally, you will find a room is pleasanter if your window sills are below the eye level of a person seated. Such an arrangement permits a clear, unobstructed view out-of-doors.

Architecture and Furniture Arrangement

It is a wise family which figures the placement of its furniture before building or buying a house. You can have a good deal of profitable fun by cutting paper patterns of your furniture to scale—that is, $\frac{1}{4}$ or $\frac{1}{2}$ or 1 inch on the paper should equal 1 foot in the actual dimension of the furniture. Then, marking the pieces to identify the furniture they represent, place them on a block of white paper ruled to the same scale until you have arrived at a satisfactory arrangement.

This procedure may be varied by waiting until you have a floor plan of your prospective home before trying to arrange the patterns. Either will give you a pretty sound idea of exactly how much space you need in your living room to accommodate your furniture. You will also quickly spot any faults in the plan, such as bad arrangements of doors and windows, or insufficient wall space.

In planning your living room, the important thing is to know at the beginning the character you want and then make every detail contribute to it. The really successful house is one that has been clearly visualized at the outset.

Placing the Dining Room

Assuming that you have decided in favor of a separate dining room, you have the choice of two main positions for it. In the symmetrically planned home, with central hall running from front to rear, it is placed along with the kitchen on one side of the hall with the living room on the other. This has the advantage of segregating the two rooms and providing maximum privacy for each.

The alternative is to have the dining room adjacent to the living room with a connecting door between them. This gives you two rooms which may be thrown into one when you are entertaining. It also helps reduce waste space, as the size of the hall can be much reduced.

When you relate the dining room with the kitchen, you have to decide whether to have a pantry. A pantry has the advantage of providing additional storage space; it can hold a second refrigerator for salads and cold desserts; it provides a place for washing and storing glassware and silver; it is a barrier against noise and odor.

On the other hand, it takes up space which the small house often cannot spare and it is also an extra cost. In the maidless house it is generally eliminated because the disadvantage of the added distance between kitchen and dining room outweighs its advantages.

Without a pantry, there is a direct connection between kitchen and dining room. Therefore, the door between the two rooms should be placed as inconspicuously as possible, preferably near a corner so that people at the dining room table will not get a full view of the kitchen every time the door is opened.

If you combine dining room with living room, the best way to treat it is to put the dining section in an alcove placed at right angles to the long direction of the living room. This definitely separates the living and dining sections of the room, and makes possible greater privacy. At the same time you can use the large single area for entertaining if you wish to do so.

Plan Dining Room to Fit the Furniture

The dining room should be planned around its furniture, since it is fixed in size and amount. The shape and size of the table, in normal use, is the starting point in deciding on the size of the room. There should be from 3'6" to 3'10" between table and wall, or table and wall furniture to allow for service.

In addition to the table, the usual dining room furniture consists of a sideboard, buffet or server, and six to eight chairs, one or more of which may be used elsewhere as straight chairs.

If the dining room is part of the living room, the furniture must be carefully related to the space set aside for it and to the furniture in the living section of the room. If there is a definitely marked dining alcove, it is desirable to have its furniture kept within these boundaries.

COMMON SIZES OF DINING ROOM FURNITURE

TABLES SQUARE

2'0" x 2'6" (two people) 3'6" x 5'0" (six people)
3'0" square (four people) 4'0" square (eight people)

TABLES ROUND

2'7" to 3'0" in diameter (four people)
3'2" to 3'9" in diameter (five people)
3'10" to 4'4" in diameter (six people)
5'1" to 5'8" in diameter (eight people)

TABLES OBLONG

2'6" to 3'0" x 3'6" (two people on a side)
2'6" to 3'0" x 5'0" (three people on a side)
2'6" to 3'0" x 8'0" (four people on a side)

SIDEBOARD OR BUFFET

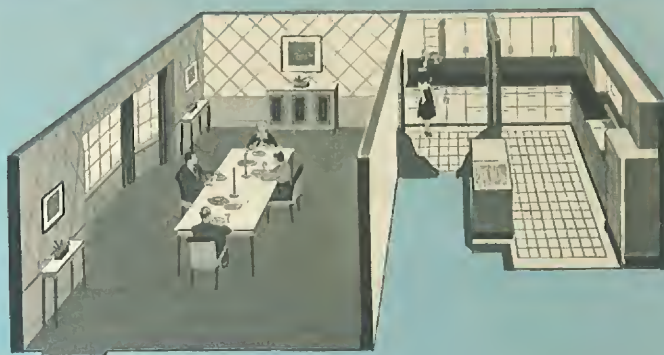
1'8" to 2'1" deep x 4'0" to 6'6" long

SERVER

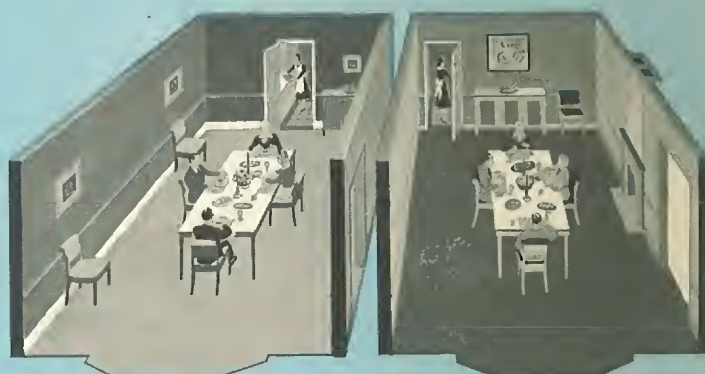
1'2" to 1'9" deep x 2'8" to 3'6" long

CHAIRS

1'3" to 1'10" deep x 1'2" to 1'9" wide
Arm chairs are from 2" to 3" wider



A pantry provides additional storage space, a place for washing and storing glassware and silver, and is a barrier against noise and odor. However, in many small homes it is eliminated because of expense, and also because of the added distance between kitchen and dining room.



BAD

GOOD

If there is no pantry, the door between kitchen and dining room should preferably be placed near a corner so that people at the dining room table do not get a full view of the kitchen every time the door is opened.



BAD

GOOD

The dining room should be planned around its furniture, since it is fixed in size and amount. There should be ample room between table and wall, and table and other pieces of furniture, to allow for service without crowding. This distance should be from 3'6" to 3'10"

PLANNING YOUR KITCHEN AND LAUNDRY



The well designed kitchen in the home of Mr. Robert Arneson, Lake Oswego, Oregon. Glenn Stanton, Architect. Note location of refrigerator near service entrance—light over range—window over sink—"toe room" under the cabinets.

HOME ECONOMISTS have developed a science of kitchen planning that enables you to have a kitchen as efficient as the modern office.

However, before you decide on a compact kitchen, consider whether that is really the type you want. It may well be; but many families have found that a too compact kitchen is not the full answer to happy housekeeping. Intelligent planning and modern equipment—most certainly! But the kitchen in many homes has half a dozen uses besides the preparation of meals—uses such as eating, sewing, neighbor-visiting, child-playing, and mid-day relaxation.

These observations are not intended to deery efficient kitchen planning, but simply to call attention to the necessity on your part of planning for all the uses to which you may want to put your kitchen.

The work in the kitchen should be organized into three centers: Preservation and storage, preparation and cleaning, and cooking and serving.

Preservation and Storage Center

The food storage space should be as close as possible to the entrance through which your meat, milk, and groceries are delivered.

In this space you will need your refrigerator, work tops on which you can prepare foods, base cabinets for bulk storage and wall cabinets for package goods.

Preparation and Cleaning Center

You need space to prepare foods as well as space for cleaning the utensils used in getting meals ready. Here also you will want facilities for cleaning china and tableware and a space to store them. At this center you should have sink, drainboards, base and wall cabinets, and work top space. If you own a dishwasher, this is where it goes, as well as garbage disposal equipment, towel driers and similar appliances.

Cooking and Serving Center

The cooking and serving center is generally close to the dining room, although many housewives prefer to have the range between refrigerator and sink, especially in the "U" shaped kitchen. Here you want your range, counter space for serving, wall or base storage cabinets for utensils such as skillets, roasters, and pan covers that are used only at the stove, as well as a duplicate set of condiments and spices for the seasoning required during cooking.

Kitchen Arrangements

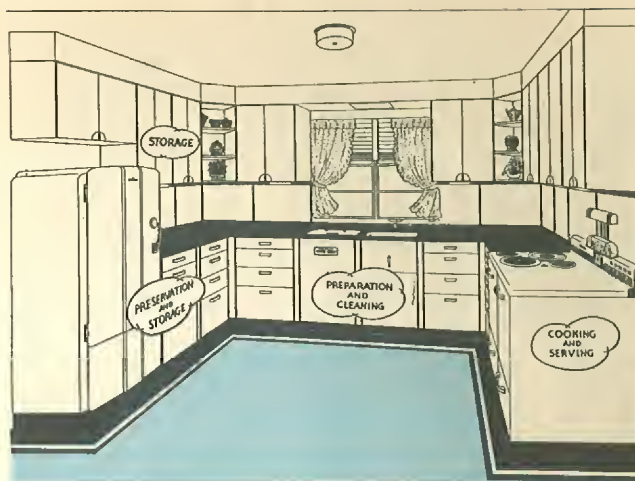
There are three generally recommended kitchen arrangements: The "U" shaped kitchen, the "L" shaped kitchen and the "Corridor" plan. Of these three the "U" shape is considered best because it is the most compact. In this plan, the *Storage Center* forms the arm of the "U" nearest the service entrance; the *Cooking and Serving Center* takes up the arm adjoining the dining room door and the *Preparation and Cleaning Center* forms the base of the letter, although frequently the latter two centers reverse positions.

The "L" Shaped Kitchen

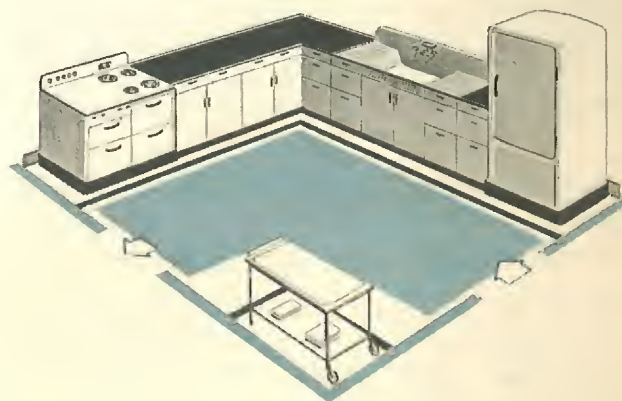
In the "L" shaped kitchen, the Preparation and Cleaning center is at the elbow of the letter, and the other two centers at the extremities near their proper doors. One advantage of this arrangement is the space which it provides for a breakfast alcove or work center.

The "Corridor" Plan

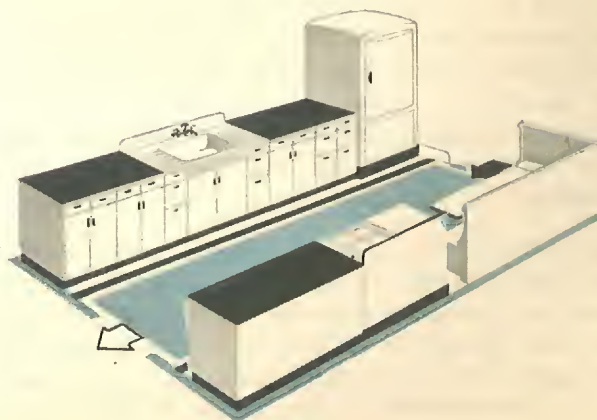
The "Corridor" arrangement places two centers on one side of the room, with the third on the wall opposite. This plan is not as compact and the doors, directly opposite each other at the two ends, may make the kitchen a passageway. A fourth possibility is to place all three elements along one wall, but this is practical only in very small kitchens because of the extra steps it entails.



This diagram illustrates the major kitchen centers and their relation to each other in a typical "U" plan. Due to personal preferences and architectural requirements, the preparation center frequently changes place with the cooking and serving centers in this type of kitchen.



Illustrating a well planned "L" shaped kitchen.



This sketch illustrates a well planned corridor shaped kitchen. Notice the space for informal kitchen eating.

Door and Windows in the Kitchen

Windows are usually best located above the sink. If at all possible, a kitchen window should overlook the play yard so that the housewife can keep an eye on the children without continually leaving her work.

Too many doors, or their improper placement, can ruin a kitchen. If possible, there should not be more than two doors, preferably placed in corners, where there is less chance of their interfering with any work center. You can eliminate extra doors leading out of the kitchen by including a rear entry, (even in a small house) from which doors open to the kitchen, maid's room, front hall, cellar, garage and cleaning closet. This entry should be easily reached from the rest of the house, and there should be a door opening from it to the front hall so you can go directly to the front door without passing through another room.

Kitchen Equipment and Storage Space

Here are a few general hints about kitchen equipment. If you are buying a new range be sure it has the automatic features which make cooking and roasting almost foolproof; also the flat tops with spaces for hot dishes. The range should be built flush with the floor (as should all other equipment) for easier cleaning.

When buying a sink, don't get one with a single drain-board unless there is counter space on the other side. You need work space on both sides of the sink.

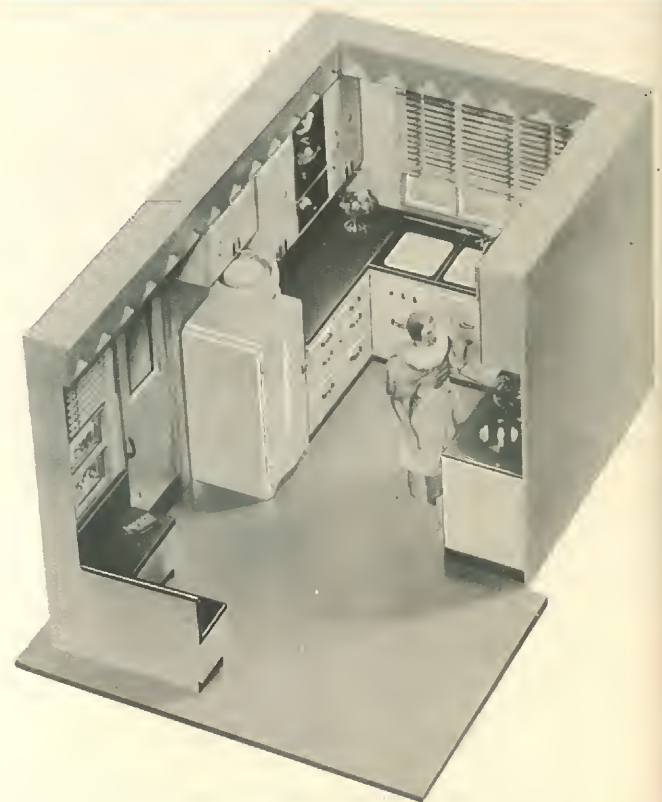
Wall cabinets above the counters have glass or solid doors. The trend is toward the latter, for they are easier to keep clean. Open shelves are not very popular because they are considered dust catchers. However, you might have them near the preparation center if you use them to hold various staples stored in uniform, tightly covered containers.

Between the top of the counter and the bottom of the wall cabinets there should be a distance of 15" to 18". Don't have your cabinets so high that you can't reach the top shelf. A person 5'9" tall can reach an object 6'3" from the floor on a shelf 10" back from the counter. You can figure from this how high your top shelf should be.

Adjust your cabinets not only for height between shelves, but also for depth, and avoid storing staples such as spices and seasonings in rows five or six deep. The space for these should be shallow—5" for small jars and packages, 5" to 7" for larger ones. This arrangement makes shelves tidier, and the things on them easier to find. A step-shelf is a convenient accessory to make small jars and packages easily visible and handy. Sanitary cove bases should be formed of floor materials and



A well planned kitchen often includes space for informal meals, as shown in this illustration, and should be light and cheerful.



It is desirable to have a kitchen window over the sink whenever possible, and particularly desirable to have the window look out on the children's play yard so that the mother can keep an eye on them while she is working in the kitchen.

carried into toe space beneath base cabinets and all built-in equipment. The toe space should be 4" high and 3" deep.

There are two cabinets which you should surely include. One is a storage cabinet for pots and pans. This cabinet should be near the range, and we show a photograph of one on this page. The other is a storage closet for cleaning equipment: vacuum cleaner, carpet sweeper, pails, mops, brushes and brooms. The proper size is 16" to 18" deep, 3' long and 5'6" high so that brooms and mops can be hung off the floor. There should be small ventilation holes at the top and bottom of the door.

Lighting and Ventilation

You will need one general ceiling light, preferably enclosed in diffusing glass. You will also want lights at sink, range and under the cabinet at the storage center. A ventilating fan at a kitchen window is a great help. It not only prevents cooking odors from traveling through the house, but keeps the kitchen cooler and cleaner. A fan draws vaporized grease out of the room before it can mix with dust and settle on walls, ceiling and floor.

Walls, Ceiling and Floor

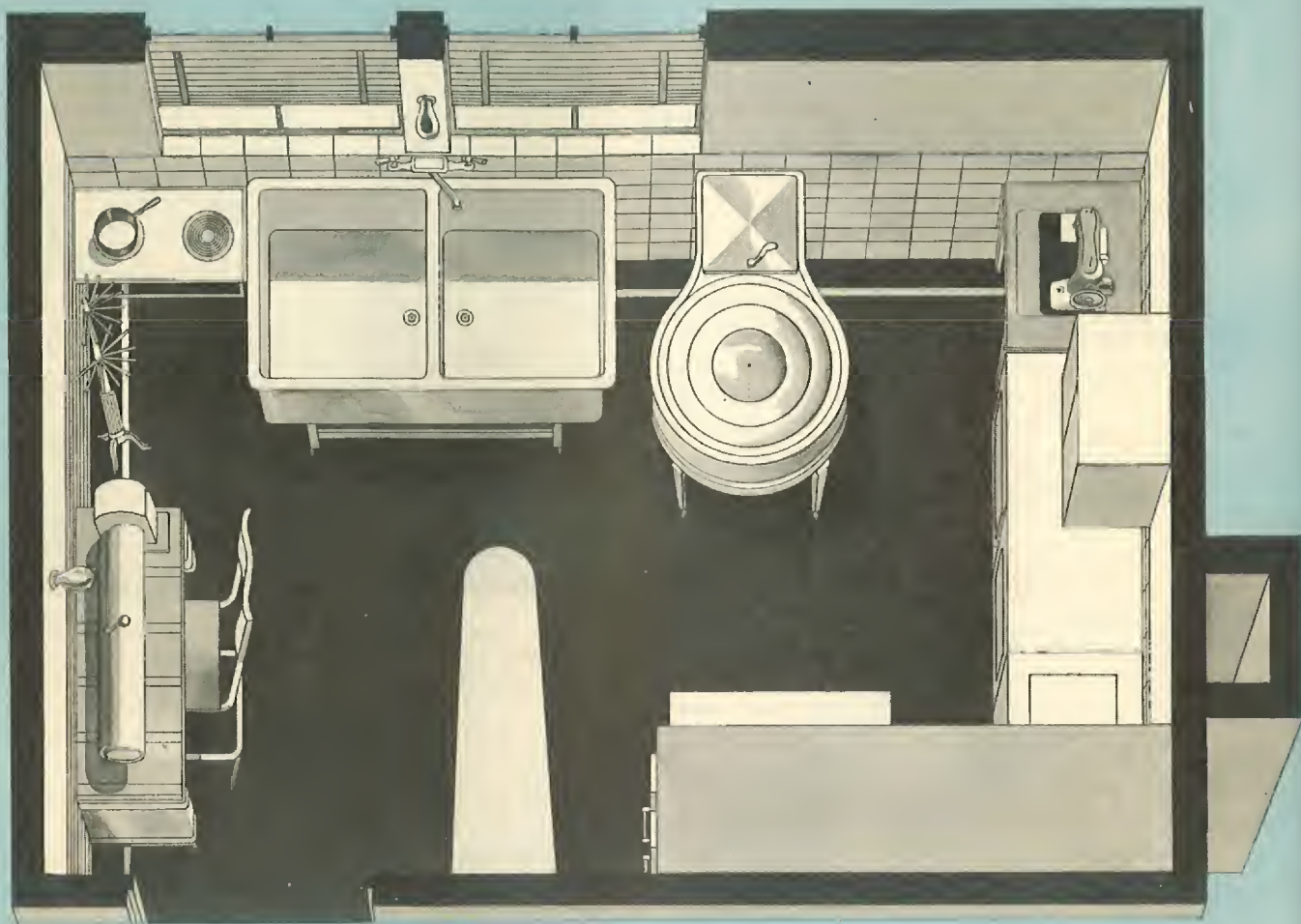
It is hard to improve on painted plaster for kitchen walls and ceilings. This finish is easy to keep clean, and lasts a long time without repair or redecoration. The plaster should be gypsum plaster on a fireproof base (Red Top Metal Lath or Perforated Rocklath) to provide proper fire protection. Keene's cement is an excellent plaster for kitchens, for it is a gypsum plaster especially prepared to provide an extremely hard surface and one that is highly resistant to moisture. The paint should stand scrubbing and be without glare.



This pot and pan storage cabinet is really a kitchen necessity. It eliminates a great deal of bending and the inconvenience of having to nest pots and pans together.

Kitchen floor material should be resilient to the feet, impervious to moisture, fruit or grease stains and have long wearing qualities. Linoleum as a kitchen floor surface satisfactorily meets these requirements. Linoleum should be waxed and given daily care with a dry mop—it should not be frequently scrubbed with soapy water.

A ROOM FOR THE LAUNDRY



Here is a floor plan of a laundry in which the main objective in planning was to "route" the work and save steps.

BECAUSE OF THE RUBBING, splashing and boiling that characterized the old-fashioned wash-day we used to put the laundry in a corner of the basement. But rubbing and splashing have been eliminated and boiling, except for handkerchiefs and diapers, is considered not only unnecessary, but injurious to clothes.

Bringing the Laundry Upstairs

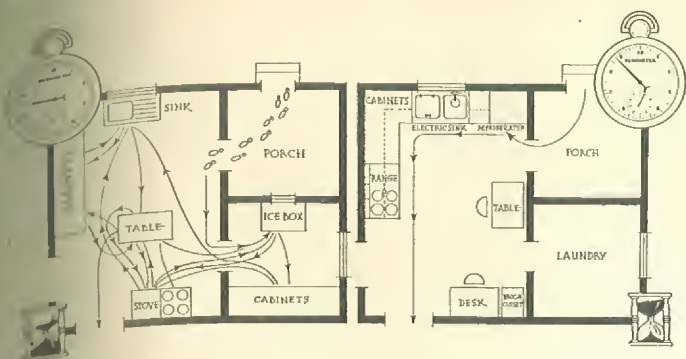
There is a tendency, consequently, to bring the laundry upstairs, placing it usually adjacent to but separate from the kitchen. There are many advantages in doing so. If you bring the laundry upstairs you can step right out of doors with your clothes when you are ready to

hang them. You don't have to carry baskets, heavy with wet wash, up a flight of stairs to the drying yard. However, whether you take the laundry out of the basement, or leave it there, its equipment should be housed in a properly planned room.

A Convenient Plan

The plan at the top of this page shows how this can be done. A clothes chute empties into a hamper at the right and next to the hamper is a working surface 4 feet long below which there are three bins to receive, respectively, white cottons and linens, colored cottons and linens, silks and woolens. Laundry supplies fit into a cabinet above. Along the wall is a sewing machine.

Near at hand are the washing machine and double laundry trays. Then, there is space for the electric ironer, smoothing iron and folding ironing board, with a clothes rack beside the ironer. The hot plate is for making starch. There are lights over the laundry trays, ironer, and work surface, in addition to a 150-watt ceiling lamp in diffusing globe.



This diagram illustrates how space properly arranged and planned can save many steps for housewife or maid working in the kitchen and laundry.

Another Laundry Plan

The plan illustrated below shows another compact, efficient laundry arrangement. The room is not very large, 8½ by 12', and it has one window and one door. The cabinet at the left of the door holds laundry supplies and has a working surface 4 feet long for sorting and sprinkling clothes. A few steps across the room

from the cabinet, the washing machine is conveniently placed next to the single laundry tray or tub.

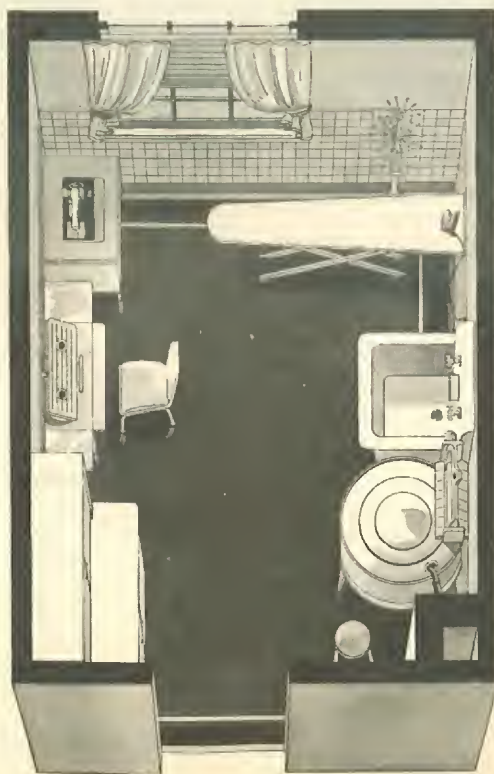
There is a space along the walls for an electric ironer, a folding ironing board, an electric smoothing iron, with a sewing machine near the window. The latter is a great convenience because it permits you to do minor mending jobs at the time the clothes are being ironed. A rack and stool with rods give you space on which to hang clothes and linens as they are being ironed.

Electrical outlets in your laundry should be at elbow level rather than at the base-boards in order to eliminate unnecessary stooping, and each appliance should be on its own circuit so that you can use more than one at the same time. Your laundry plan should also include a dryer, so that you need not be dependent on the weather. You can economically supply this with a radiator, a cover and a fan.

Floors, Ceilings and Walls in the Laundry

Plastered walls and ceilings are ideal for the laundry. They should be painted with several coats of washable, non-glaring paint in a warm, light, clean-looking color. Ivory, a warm yellow or soft green are good colors for laundry walls or ceilings.

The floors should be a durable, easily cleaned material which is resilient so that it does not tire you. Inlaid linoleum, or some other washable floor covering is the suitable type of material to use.



PLANNING THE BEDROOM



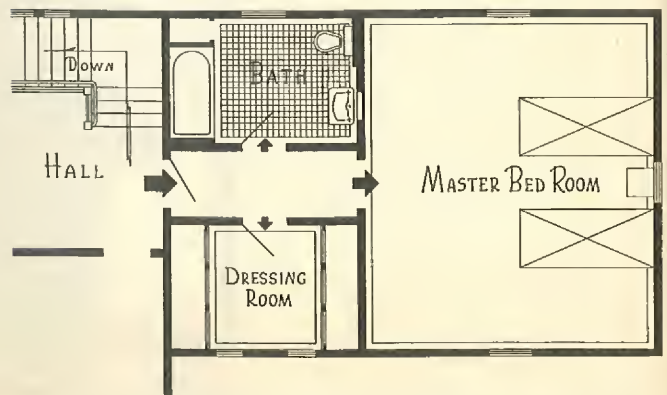
An attractive bedroom in a home designed by Albert Shaw, Architect, Chicago, Ill.

NO OTHER ROOM in the house is quite as deserving of proper planning as the bedroom. Here is a room in which one may retire to relax, be entirely informal and rest. The properly planned bedroom requires the following equipment:

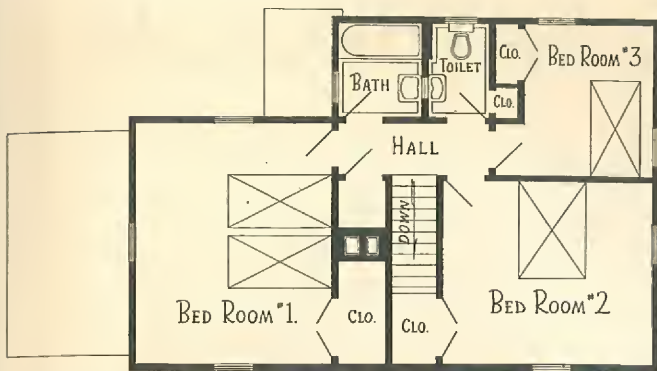
- Adequate closet space.
- Mirrors to aid dressing.
- Plenty of floor space in front of a full length mirror.
- Good light without glare directed on the person using a mirror.
- Tables, shelves or dressers for toilet equipment for each person using the bedroom.
- Chairs or benches for dressing operations (like putting on shoes) best done while seated.

These requirements are almost as essential as providing adequate space for the beds themselves.

Beds should be placed to get the benefit of cross ventilation in the summer and be out of direct drafts in the



Notice how clothes closets, dressing room and bath, the most frequently used elements in the bedroom, are conveniently located in relation to one another and the hall.



In this plan, bath and toilet are easily accessible from all bedrooms. An excellent feature of the plan is the separation of water closet and lavatory each in their own compartment. This gives the effect of two bathrooms without duplication of fixtures.

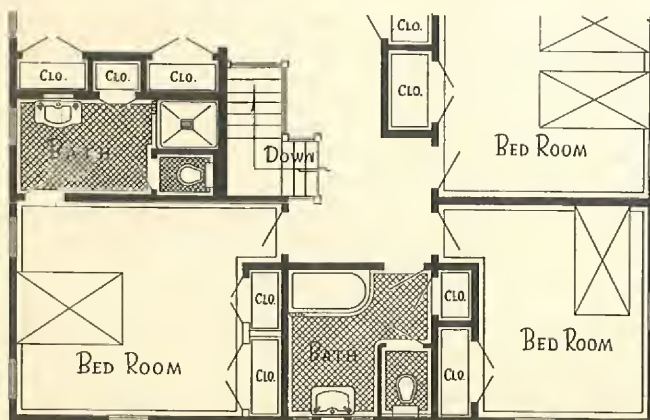


Architect S. S. Beman, Highland Park, Ill.



Architect James F. Ebbenstein, Chicago, Ill.

Notice the use of closets in this plan, along bathroom walls, to deaden sound and increase privacy.



winter. This is usually accomplished by having windows (or door and windows) on two sides of the room with the bed between. You can keep both open in the summer while only one is opened in the winter. It is also well to plan the room so that it is not necessary to place heads of beds on outside walls if you live in cold climates.

The most traffic in a bedroom is generally between the entrance door, clothes closet and personal dressing table. If the room has a private or adjoining bath, access to it should be direct and easy from both the entrance hall and your dresser. Based on the number of times utilized per day the bed is probably the least used element in the room, the bath most, dressing table and clothes closet second. The beds in a room are, therefore, best placed along walls furthest from the entrance door.

There is a tendency today to make bedrooms smaller and to strip them down to only the essential furniture required for sleeping and dressing. This makes them more restful and more healthful by eliminating dust-catching furniture and all non-essentials. But, when the bedroom is thus reduced, a companion room such as a bath-dressing room, dressing room-boudoir, or linen-sewing room, is often very desirable.

The bedroom, like the kitchen or bath, should not be made so small that it is cramped, for such a room is uncomfortable and much harder to keep tidy. The minimum distance that should be allowed between beds or between bed and wall is two feet; between bed and bureau 2'6" is minimum, and 3'4" better.

Arrangement of Bedrooms

Locate your master bedroom close to the children's rooms. This permits you to be within quick call of your children while small, and to supervise their comings and goings as they grow older.

Sleeping rooms should be as far as possible from living rooms so that children, or older people in the household, or others who retire early may sleep undisturbed by late entertaining.

Soundproofing is desirable between adjoining bedrooms, between bedrooms and baths and between bedrooms and living rooms. Careful planning can often accomplish this without any extra cost. For example, an intervening closet with its double walls creates an effective sound barrier. Resilient "plaster systems" are also an effective, economical solution. For details regarding such systems see page 100.

For unexpected guests or during an illness emergency sleeping facilities are handy. Often these can be provided by including a bed closet and door bed in recreation rooms, attic room or the second floor sewing room.

PLANNING THE BATHROOM



TWO BATHROOMS, or a bathroom and downstairs lavatory, are today generally considered essential even in small houses. We recommend that, if possible, the extra bath be included. It adds greatly to the comfort and convenience of your home, and it is one of the surest ways to maintain its value. Renters or buyers invariably prefer the multiple bathroom house and often will pay a premium for it.

If your home has more than three bedrooms, it is advisable to allow for an additional bathroom (above the minimum two) for every two bedrooms above three. And if you are planning your home to include servants' rooms you will want to provide at least one complete bath for their use.

There are ways by which the cost of bathrooms can be lessened if they are kept in mind while planning the house. For example, bathrooms cost less when they are located over each other, or over other plumbing fixtures (such as kitchen sinks) to permit the use of a common soil stack; or when bathrooms on the same floor are located back to back; or if the water closets and the pipes of other fixtures are located close to the soil stack to eliminate horizontal runs of piping.

However, while it is important to keep these economy rules in mind, it is more important not to let a slight saving in initial cost interfere with a logical plan. Convenience and privacy are two essentials of a bathroom. It is well worth extra expense to have them.

How to Secure Privacy

There are several ways in which bathroom privacy can be attained. One of them is to install the water closet in a separate compartment, either enclosed in a part of the bathroom itself or placed in a small passageway to the "bathing room" so that it may be used independently of the bath, or made a part of it at will.

There are several other methods of maintaining bathroom privacy. For example, bathroom doors should be so located that when open they shield the water closet. Hall bathroom doors should be as remote as possible from hall bedroom doors, and it is better not to locate baths directly at the head of the stairs. Rather than have a bathroom directly adjoin a room, isolate it with an intervening closet, or a seldom used passageway.

"Resilient" plastering systems also help maintain bathroom privacy because they reduce the transmission of sound between rooms. See page 100 for details.

How Large Should the Bathroom Be?

Because of cost there is a natural tendency to make bathrooms as small as possible. It is generally agreed that the most compact practical size possible for a full bath is 5' x 5'. It is wise planning, however, to provide more than this minimum space.

Unless it is a guest lavatory or a "convenience" toilet, a bathroom should be large enough to accommodate two people. Sickness often requires an attendant to accompany the patient to the bathroom, and the care of small children also requires space for two people. Dimensions for bathrooms that combine compactness with enough elbow room are 7' x 5½', 8½' x 7', 10' x 5'.

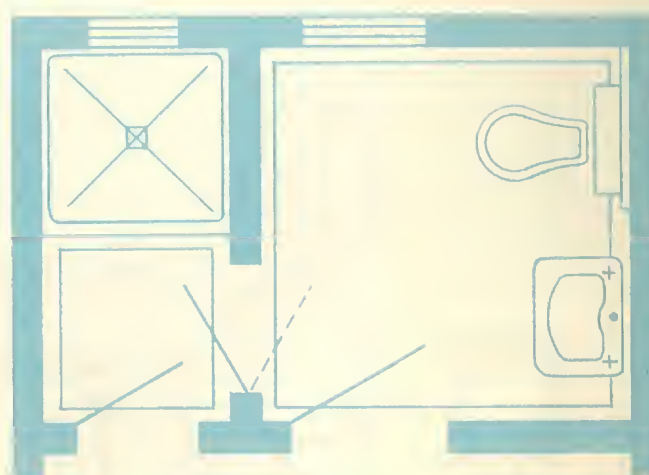
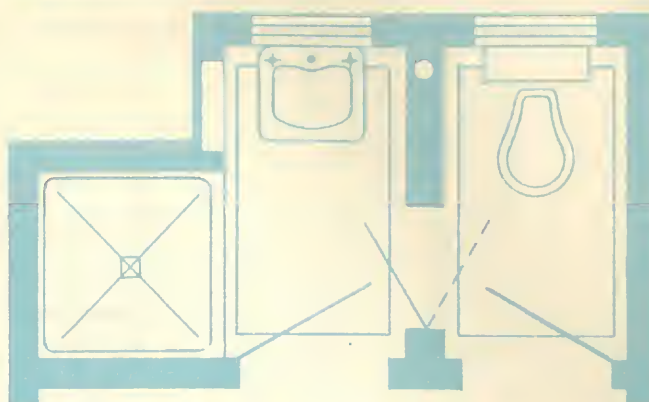
Decorating the Bathroom

Bathroom decoration offers limitless possibilities, and you may choose a note as gay or as quiet as you wish. The one thing to keep in mind is that whatever wall finish you use must be able to withstand daily splashing, frequent cleaning and plenty of high humidity.

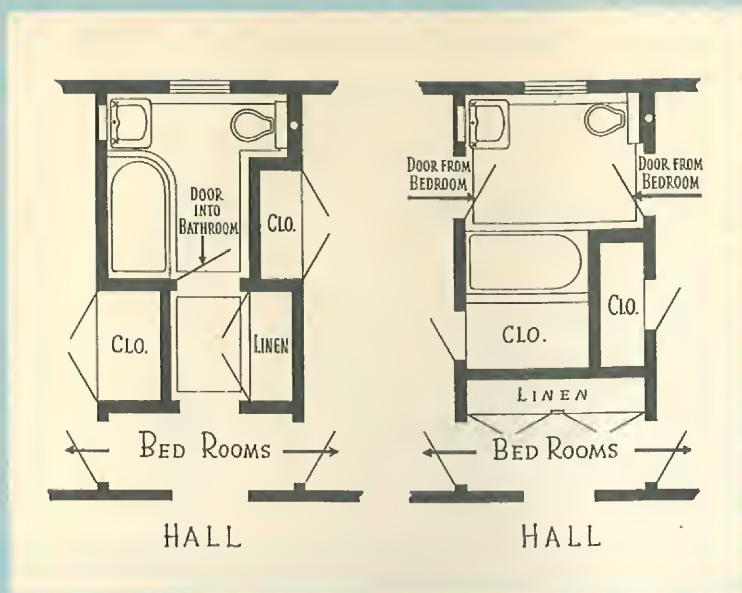
Plaster walls are hard to improve upon for bathroom finishes. Keene's cement is the plaster to use in the bathroom. It can be trowelled in imitation of tile and then enameled. Ceramic tile is often used on bathroom walls, and for the effect of tile at wallboard economy you can use Sheetrock, a tile board scored to simulate tile. The walls may either be painted or covered with one of the gay washable wallpapers, or linoleum.

On the following page are shown examples of good and bad planning of bathrooms. In addition are shown eight well planned bathrooms. One of the most important units in the modern home, the bathroom deserves extra consideration in your planning.

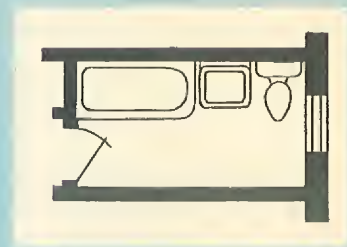
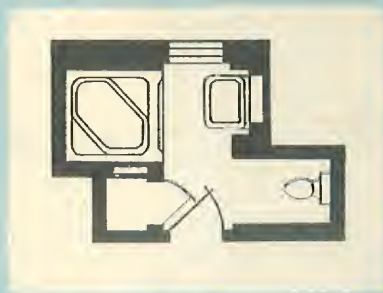
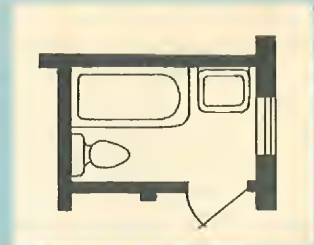
PLANS FOR THE BATHROOM



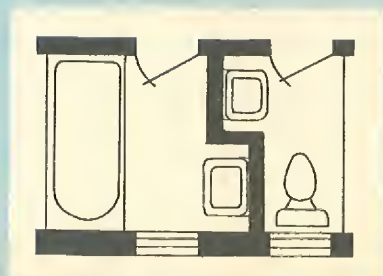
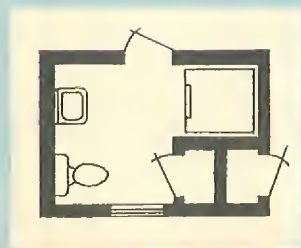
Plans above show three ways of dividing bathroom fixtures so that two or more people can use them at the same time with comfort and privacy. The top shows a water closet in one compartment with shower and lavatory adjoining; the center shows the lavatory with water closet in a separate compartment. The third combines tub and lavatory together, with the water closet in the adjoining compartment.



These two illustrations show a bad and a good way of handling a bathroom serving two bedrooms. The one at the right has a door from each bedroom entering directly into the bath. At the left there is only one entrance into the bathroom through a small hall off the main hall. The latter is by far the better arrangement, because the bathroom can be entered directly from the hall without going through a bedroom, and a single bathroom door is a greater assurance of privacy.



At right, above and below are shown eight well planned arrangements of bathroom fixtures.



A PLACE FOR EVERYTHING



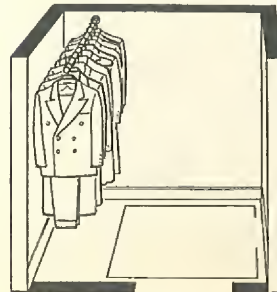
Two well equipped bedroom closets in a home designed by Oman & Lilienthal, Architects, Chicago.

IN THE PLANNING of your home, or in the purchase of one, insist on the proper number and proper size of storage spaces.

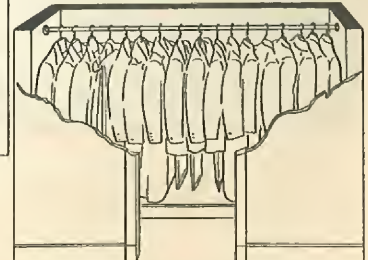
Because family possessions and family housekeeping habits vary, there are no fixed standards, but the following are minimum closet requirements: two clothes closets in the master bedroom (or one good-sized closet if the apparel of two people can be properly accommodated and segregated); one closet for each minor bedroom; a hall closet for outside clothes in the entrance hall; a cleaning closet in or adjacent to the kitchen; auxiliary closet either near the service entrance for sports equipment, tools, etc., or in the basement; and upstairs linen closet.

If possible include an additional cleaning closet upstairs which might also house a sewing machine; and an excess food storage closet either off the kitchen or in the basement.

Proper closet planning requires, first, an inventory of all of the possessions for which you will need storage space. Next, decide where each article may be most easily reached—where kept in the best condition. Third, check dimensions and lay-outs of closets and storage



Here are shown two poorly designed closets. The one at the left wastes space, and in the one at the right, garments at both ends are hard to reach.



rooms to make sure they provide sufficient space. Fourth, check each room and part of the house to make sure it has enough space to keep the things which are used in or near it.

An Example of Closet Planning

To show what is meant by proper storage space planning, let us take as an example a closet in a woman's bedroom that is to hold clothing, hats, and shoes.

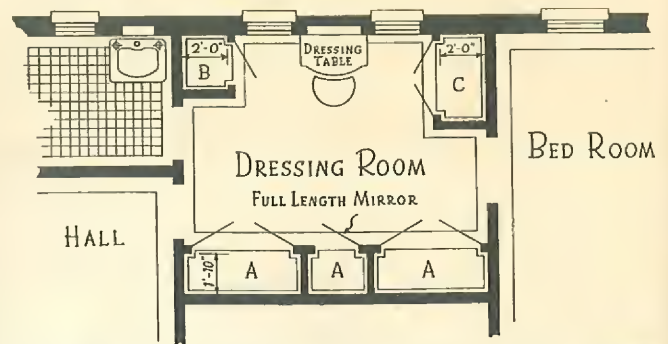
There will be a rod parallel to the face of the closet on which to hang dresses. As a hanger is about 18" wide the closet should be not less than 20" deep, 22" is better, and more than 24" introduces waste space.

If you let the main doors to the closet run only to a height that can be reached from the floor—say 7½' maximum—you can make the space above the main closet useful by providing cupboard doors running to the ceiling. This becomes a space for little used clothing.

The closet doors may swing out or may slide across each



A well arranged and fitted linen closet. Notice how shelves have been built on the backs of the doors to make use of what would otherwise be wasted space.



This plan shows a well laid out dressing room in relation to bedroom, bathroom and hall. Notice how the wall areas have been used for closet space. The closets at "A" are fitted for clothes. "B" and "C" are storage closets. Also note the dressing table in front of the window, and the full length mirror on the closet door directly opposite.

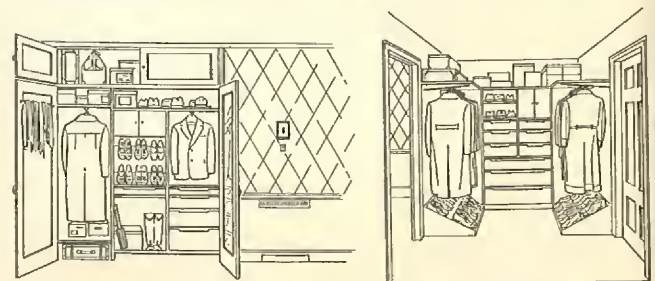
other. The former method allows you to use the back of the door for clothes hooks, while the latter saves considerable floor space.

To avoid crowding, it is well to allow an average of 3" of rod space for each garment on a hanger. Therefore, if we want to accommodate 15 garments in this closet we shall need 45" of rod length and the over-all dimensions of the inside walls must be 45" by 22".

If your plan happens to require a shallow closet, let us say one that is 15" deep, rather than the long rod you will need three pull-out rods spaced 24" apart and 12" from either end, giving you a closet 15" deep and 72" wide. The area of both is approximately the same but while the former needs only four feet of wall space the latter will take six feet. The closet should be slightly larger if you want hookspace for clothing not kept on hangers. Hooks are best located at the ends rather than in back of the closet where they are inaccessible.

It is well to arrange doors to expose the entire face of the cabinet, as it saves floor space to be able to stand in the bedroom to get things out of the closet.

Normally a rod 5' to 5½' from the floor will hold any dress or suit without difficulty so a shelf or two may be placed above the hanger rod for hats. By hanging short garments at one end of the closet you can make room below them for shelves and racks for shoes.



Here are two well designed closets. All space is utilized, none is wasted, and all the contents of the closets are easily accessible.

FITTING THE HOUSE AND GARAGE TO YOUR LOT



An attractive Regency house at Tenafly, New Jersey. Lucht & Anderson, Architects, Cliffside Park, New Jersey.

THE NEXT STEP after planning the rooms of your new home in relation to their furniture and functions, and to each other is to arrange them in a definite plan, with relation to your lot. This involves consideration of your site with regard to:

- Its orientation with respect to sun movements.
- Its outlooks and views.
- Its relation to streets.
- The probable location of the garage.
- Locations of gardens, terraces and porches.

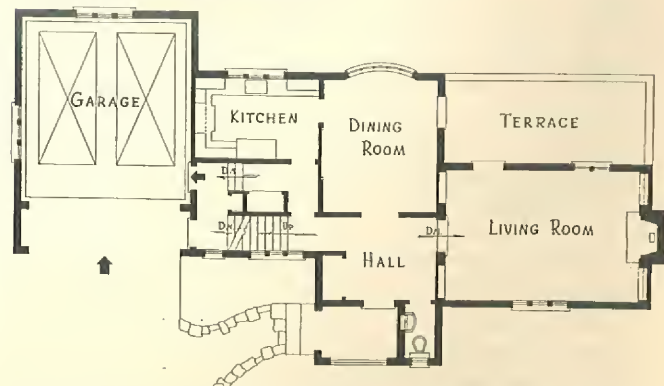
The accepted principles of orientation are that:

Living rooms should have south, southeast or east exposures.

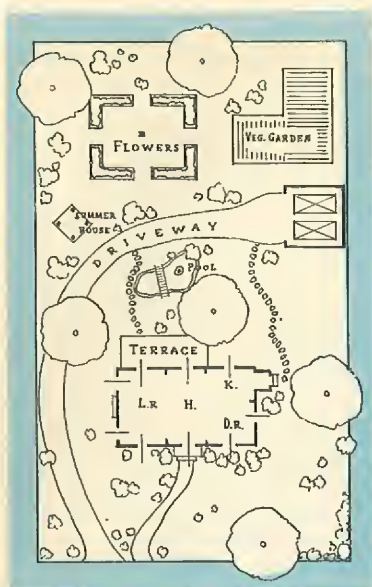
Kitchens had best face north, northeast or east; avoid a western exposure in the kitchen if possible because of the hot rays of the afternoon sun.

Libraries, studios, sewing rooms and similar rooms

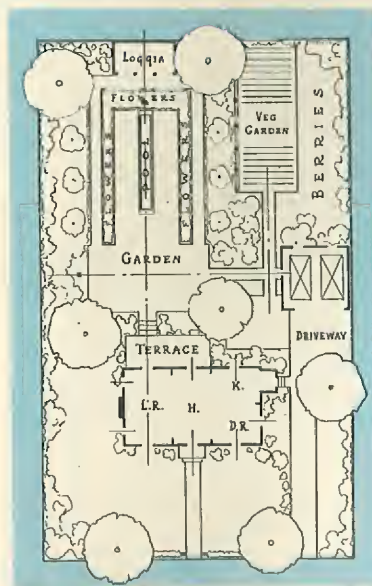
are preferable with a northern exposure for uniform light, or an eastern one if they are largely used during the afternoons.



An excellent relationship exists between garage and house in this plan. Notice how the garage is easily reached from either the living quarters or the kitchen, and that the garage can be reached from the living room without going through the kitchen. Also notice that arriving guests can get out of their cars in the driveway and enter the house without going to the main entrance, or without going through the kitchen



This property shows the need for a carefully laid out landscape plan.



A landscape architect will help you get an orderly well planned lawn and garden effect such as this.

Since bedrooms are nighttime rooms they may face in any direction so far as their exposure to sunlight is concerned. As a matter of fact, in the typical two story house they must face all sides in order to give proper cross ventilation.

In placing the master bedroom, therefore, your primary consideration will be its view, or its exposure to prevailing summer winds. It is generally not advisable to select rooms with western exposure for children because during the summer they go to bed before the sun has finally set and a western room is also likely to be warmer than the others.

While important, these points should be considered as guides rather than hard and fast rules. For example, a

splendid view to the east might change your living room exposure, as might also your desire to put the living quarters away from street noises.

Where to Put the Garage

The garage is an evolution of the stable and until recently like the stable it was relegated to the back of the lot. While its odor, flies and general unsightliness were good reasons for getting the stable as far as possible from the house, they do not apply to the garage.

Our automobiles are so frequently used that leading authorities on home planning say that the garage should be a part of the house, and not only a part of the house, but a part of the entrance area, easily accessible to both living and service sections. Few people who have had to run from house to garage through rain, snow or slush will seriously debate the convenience of having the garage planned as a definite part of the house.

Accessibility to the street is as important as access to the house. The inhibitions about putting the garage on the street front are disappearing as more people recognize that the garage equals the front door in importance. A short, easily negotiated drive to the garage section is as logical as a straight path to the door.

When we incorporate the garage as part of the house it is essential so to place it that it will cut off the least sunlight and view from principal rooms. This is an important problem for your architect, as it depends on your site, the style of your home and other factors.

The Advantages of a Landscape Architect

The employment of a landscape architect was formerly considered a luxury except for the large estates. Today, however, he is used more and more by the owners of small homes.

A landscape architect will assist you in making a complete unified plan for placing terraces, gardens and drives in relation to the house. He will work with your architect and contractor to help achieve the best placement of your home on your lot, with reference to standing trees, grading, views and drainage.

He will help draw up a "planting" plan for shrubs and flowers. This is a plan which you can follow at once or develop over a period of years. The illustrations on this page show how a landscape architect can assist in achieving a logical, orderly relation between a house and its surroundings.

Through his advice and help on these matters the landscape architect often saves many times his nominal fee. For example, his knowledge of soil conditions frequently helps prevent damp cellars. By an expert arrangement of driveways he may cut their cost by many dollars, as well as reduce grading expenses.



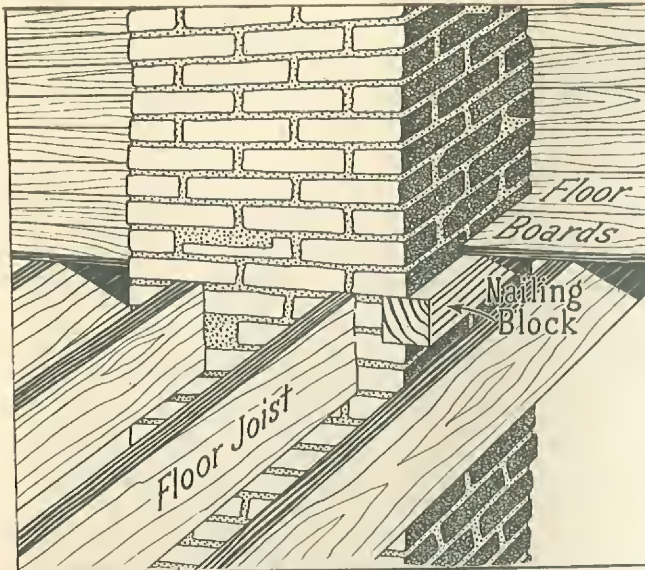
HOW TO PROTECT YOUR HOME AGAINST FIRE

THE PEOPLE who could tell the most harrowing tales about the dangers of residential fires cannot speak. They are the 10,000—half of them women and children—who annually lose their lives in this country by fire. Other thousands are injured each year and millions in property are destroyed. Insurance may recover some of the property loss, but it cannot bring back lost lives nor the heirlooms and other household possession whose sentimental value often exceeds their cash worth. Building to guard against fire is the only way to protect them, and these losses are the more tragic because it is easy and inexpensive

to protect a home against fire. Although the art of fire-proofing cannot prevent the occurrence of fire, it does these useful things to save lives and money:

1. Protects your home from flying embers originating from fires in other buildings.
2. Confines fires occurring within the home to the rooms in which they start, protecting lives and property in the remaining rooms.
3. Protects the structural (load carrying) frame from destruction or weakening by fire, and helps prevent collapse of the building.

Fire Stops



Using the chimney to support framing members is a fire hazard and is also apt to cause cracked walls and ceilings because of future settlement or expansion in the chimney.

You can build a high degree of fire protection into your home by following a few simple construction rules and by using fireproof materials, especially at those points where fire is most likely to start and spread. These materials should go into your budget as "must" items, for they cost no more if they are wisely chosen, and fire-safe construction adds strength and sturdiness, as well as security to your home.

The Basement and Attic

The basement and attic are frequent sources of fire difficulties as both spaces are often used for storage.

There is also the added danger of a basement fire mushrooming through the house and cutting off escape unless it is confined and brought quickly under control.

You should, therefore, protect basement joists by covering them with metal or gypsum lath, particularly Perforated Rock Lath and finishing them with gypsum plaster. You thus place a shield of fireproof materials between the basement and the rest of the house.

Although modern heating apparatus is carefully designed to confine heat and flame, you should doubly protect your family by isolating the furnace room—enclosing it in a wall built of fireproof materials. Here, again, partitions of metal or gypsum lath or gypsum partition tile, properly covered with gypsum plaster, are an excellent economical solution.

It is also wise to finish off your attic with fireproof materials whether you plan to use it for living purposes or confine it to storage. Sheetrock is an excellent and economical material for this purpose.

In frame construction, there are openings directly connecting the spaces separating the joists—which are under the floor—and the spaces separating the studs—which are in the partitions and outside walls.

This provides open flues between floors and between walls, often extending from basement to roof line, which form a perfect chimney for fire, creating a draft which can quickly fan a small fire to a serious one.

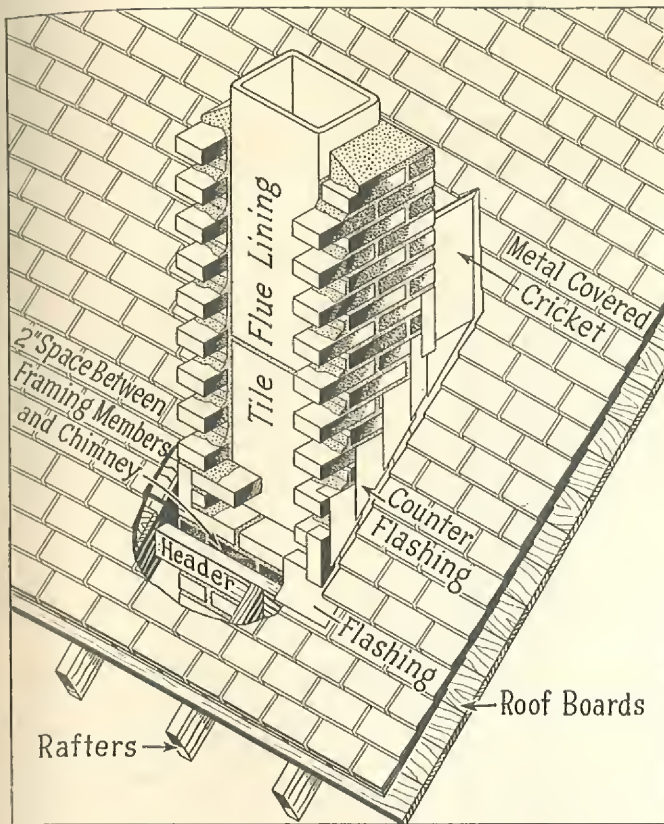
However, you can practically eliminate this hazard by taking two precautions. First, enclose all wiring in proper conduits; second, install efficient fire stops at the points where partitions start from the floor so that you cut off the draft between floors.

The illustration on page 46 shows a method of fire stopping from basement to roof line. Fire stops are made by building receptacles across the joist or stud space when indicated and filling them with fireproof debris, such as plaster droppings, brick noggings, mortar, etc., all laid with the idea of making them as resistant as possible to air passage.

You may also make the fire stops out of metal lath formed into baskets, plastered and filled with fireproof insulating wool.



Roof and side walls of asbestos cement shingles protect against the danger of burning embers setting fire to your home.



This illustrates a chimney properly constructed to safeguard against fire. Notice that there is a 2" space between framing members and chimney. The chimney is made weather-tight with flashing and counter-flashing. The former are the pieces of metal nailed onto the roof along with the shingles and bent up against the chimney wall. The latter are pieces of metal set into the brickwork and bent down over the flashing to form a water-tight joint. A "metal covered cricket" sheds water from behind the chimney.

Walls and Ceilings

We suggest the use of fireproof materials in the walls, ceilings and partitions throughout your home. They give protection against fire and also provide extra beauty and strength at a really economical cost. Both metal lath and Perforated Rocklath, properly finished with gypsum plaster, build this type of wall and ceiling.

Tests made at the Bureau of Standards qualify partitions made of Perforated Rocklath and plaster for a one-hour fire rating—that is, the partition if attacked by fire will not fail for at least one hour. Perforated gypsum lath is a fireproof plaster base comparable to wood lath in cost. Made of gypsum it will not burn—in contrast to the rough sawn, easily ignitable splinters of wood lath.

Metal lath, when finished according to specifications with wood fiber plaster, qualifies for a one-hour fire rating on ceilings as well as on walls and partitions. Metal lath is also recommended for stair walls and stairways, behind the kitchen stove and for arched openings.

Roofs and Side Walls

When a fire occurs nearby, or even some distance away, in case of a high wind, burning brands are apt to be blown against your home. If your roof has combustible shingles, a fire can start and gain considerable headway before it is even noticed.

As most of the burning brands which fall on buildings extinguish themselves in a short time, an asphalt shingle roof offers real protection at an economical cost—and a protection which is recognized by the insurance companies in their rates.

Asbestos shingles, made of two fireproof materials, asbestos and cement, have an even higher fire rating.

Although asbestos shingles are slightly more expensive than asphalt, both compare most favorably to wood in cost and, of course, offer much greater fire security. Slate and tile are also fireproof roof materials. The latter, however, are too costly for the small or medium priced home, and slate generally has the same disadvantage except in areas where it is quarried.

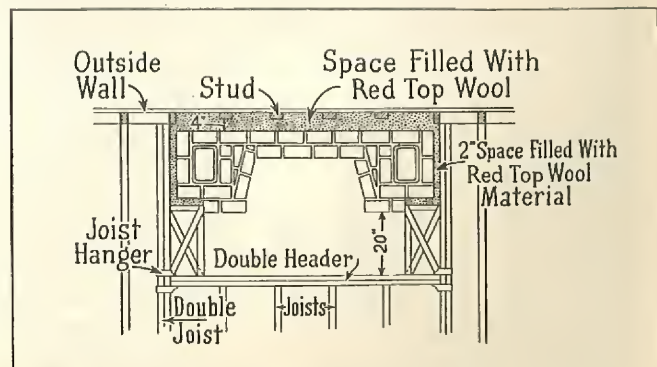
Asbestos sidings, brick or brick veneer and stucco, eliminate combustible materials from the side walls of your home. Each of them further reduces the possibility of your home catching fire from an outside source.

Gypsum sheathing, in place of wood sheathing, is another protection against wall fires. It is especially desirable to use it if a non-fireproof material such as insulating lath is applied on the inside of exterior walls.

Eliminating the Chimney Hazard

The chimney is capable of carrying heavy loads and thus the temptation is sometimes strong to use it as a support for part of the structure.

This is an invitation to trouble. In addition to the fire hazard, such construction will result in cracked plaster, as either settlement of the chimney or shrinkage of the wood framing will create severe strains.



This shows one way properly to construct a fireplace. All framing on sides should be at least 2" away from brick or masonry wall unless protected by 8 or more inches of brickwork or 12 inches or more of masonry. Fill intervening spaces with incombustible materials such as Red Top wool, concrete or mortar.

The walls of the chimney, with terra cotta flue lining should be at least 4" thick if built of brick and 8" thick if built of stone. All combustible materials, such as wood framing members, should be at least 2" from the chimney wall, and the open spaces between floor frame work and chimney filled with insulating wool.

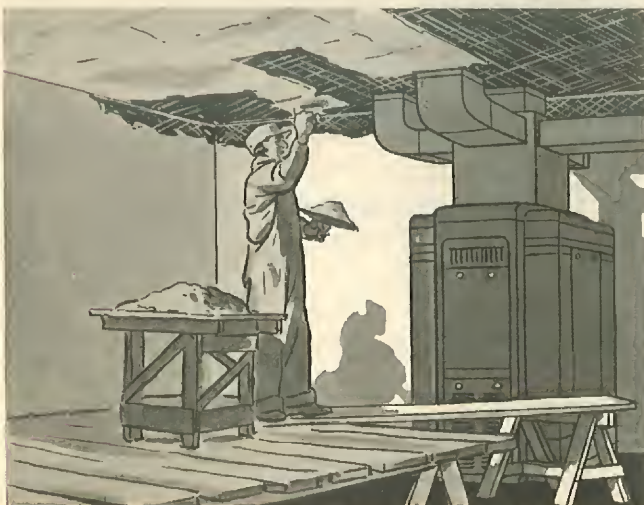
Clothes Chutes are a potential danger because they offer such a convenient path to flames and they should be built of a fireproof gypsum wallboard, such as Sheet-rock. They should be provided with tight metal doors and an automatically closing trap door at the bottom.

The Fireplace. All framing members at the sides of the fireplace should be at least two inches away from brick or masonry wall, unless protected by at least 8" of brickwork or 12" of masonry. Fill the intervening space with non-combustible insulating wool. The framing at back should be at least 4" away and the intervening space on each floor filled with insulating wool. The back of the fireplace should be at least 8" thick and lined with fire brick.

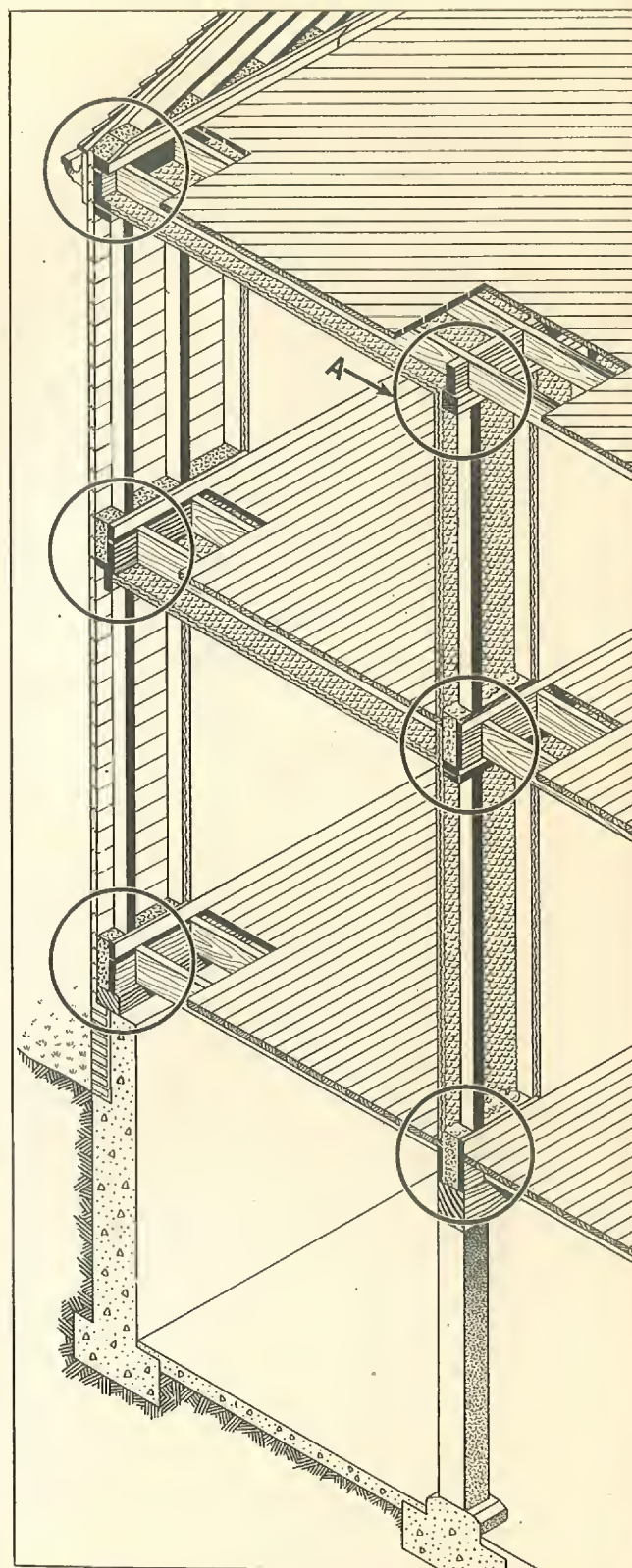
Place the joists supporting the arch in front of the fireplace not less than 20" from the chimney breast, and extend the hearth, which should be at least four inches thick, not less than 20" in front of the fireplace. The woodwork around the fireplace should be no nearer than 8" at the sides and 12" at the top.

Gypsum—The Ideal Fireproofing Material

Over 700 years ago, after one of many disastrous London fires, King John issued an edict that "all houses in which brewing or baking is done must be plastered within and without." The plaster was gypsum plaster. Its history as an excellent fireproofing material was old then, for we find mention of its use for that purpose in the literature of the ancient Greek civilization, and



As protection against fire, basement ceilings should be covered with Metal Lath or Perforated Rocklath and three coats of plaster. Ceilings in heater rooms should be Metal Lath and Plaster preferably, and the heater should be enclosed in a partition of Pyrobar gypsum tile, plastered.



This shows a method of fire-stopping in which boxes of 1" board filled with incombustible materials have been used at the points indicated. At "A" a 2" plank serves more effectively. Metal lath baskets, carefully plastered after they are put in, may be used in place of inch boards. Fire stops should be placed not only in walls and beneath floors, but on stairways, around clothes chutes and sliding door pockets.

indications of it in the still older civilization of the Egyptians. And it is still one of the most effective barriers we have against the spread of fire.

Previously we mentioned that a fireproof material in a home should do two things, (1) prevent the spread of fire, and (2) prevent damage to the structural supports so that the building will not collapse. To do this, a material must have the following properties:

1. It must not burn—it should not add fuel to the flame.
2. The material must not pass temperatures sufficiently high to set fire to the room on the other side of the partition.
3. The material must not expand sufficiently under the fire heat to wreck itself, or the building.
4. These first three, under ideal circumstances, should be maintained for the greatest possible duration of the fire.

Gypsum meets all of these requirements.



Partitions of Perforated Rocklath, properly plastered, qualify for a one-hour fire rating, as also do metal lath walls and ceilings when properly plastered with wood fiber plaster.

What Is Gypsum?

Gypsum is a mineral—a rock which is made up of calcium, sulphur, oxygen and a little water. Its chemical formula is $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$, and its water content is known as “water of crystallization,” because this is what keeps it in its crystalline, rock form. Although most of this water is driven off in the mill when gypsum is reduced to the powder that you know as plaster, it is put back into combination with the material when the plasterer prepares it for the wall, and it stays there through the years to come. The same is true when water is added to powdered gypsum to mold fireproof sheathing, wallboard, partition tile, lath, etc.

“How can that be?” you ask, “for although a plastered wall is wet when the plaster is applied, it dries out and becomes hard and dry to the touch, and wallboard and lath made of gypsum are certainly dry enough.”

That is true—but it is only excess water that dries out; the extra amount you must put in to make the material plastic. The rest of the water is in permanent combination with the rock. There are gypsum plaster masks on mummies, older than the pyramids, with the same water content they had when the ancient embalmers were through with them.

It is this water in gypsum plaster, lath, wallboard, sheathing and tile that makes it ideal fire-protective material.

How a Gypsum Wall Resists Fire

When fire attacks a gypsum wall or ceiling, water is slowly forced out, starting at the surface facing the fire and working slowly toward the cooler side. But as this happens (and it takes a lot of heat and considerable time to remove the last vestige of moisture from a particle of gypsum) it leaves a porous area of dry gypsum behind it. This dehydrated face, with its millions of tiny air cells in itself is both incombustible and a good insulator, so it further slows up the action of fire in evaporating gypsum's water content.

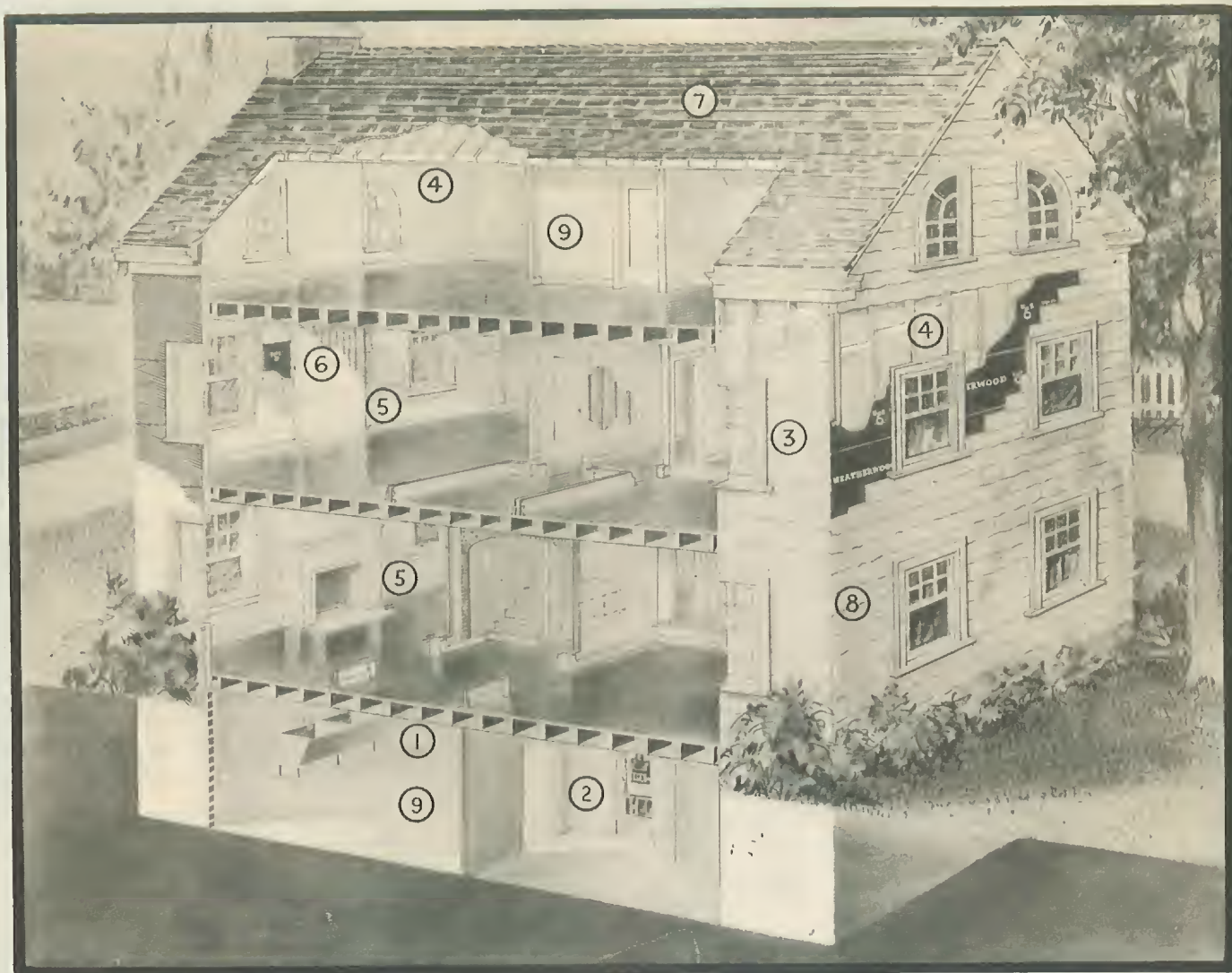
Water, at ordinary atmospheric pressure, never gets hotter than its boiling point, 212 degrees Fahrenheit. Therefore, the side of a gypsum wall away from the fire stays cool, just as ice, for example, stays cool even if you apply a blowtorch to one of its surfaces.

No heat can penetrate a gypsum partition to set fire to the next room until every bit of moisture is gone and the wall is destroyed. And this takes a long time. For example, partitions plastered with gypsum plaster over Perforated Rocklath qualify for a one-hour rating, and metal lath plastered with wood fibre gypsum plaster enjoys an hour's rating on both walls and ceilings.

Negligible Expansion Under Heat

Since gypsum cannot be heated above 212 degrees Fahrenheit and remain useful, it is only affected in case of fire by the range between room temperatures of approximately 70 degrees to 212 degrees, and expansion within this range is less than $\frac{1}{8}$ " in a 10' length—not enough to cause damage to the material or the structure.

Gypsum won't burn; the surface away from the fire stays cool; it does not expand appreciably under heat. Gypsum does all of these things for a considerable period of time. It has great strength; it is easy to apply; it gives rigidity and solidity to the building. And it is inexpensive. That is why gypsum products are the ideal fireproof materials.



HOW AND WHERE USG MATERIALS PROTECT AGAINST FIRE

This drawing illustrates where and how USG products protect against fire. All of the materials appearing in the diagram contribute additional benefits to the struc-

ture—these are explained in subsequent illustrations. Here our purpose is to show only their functions in guarding against the outbreak and spread of fire.

1. Red Top Metal Lath or Perforated Rocklath, covered with Red Top Plaster, beneath basement joists.
2. Pyrobar Partition Tile enclosing basement heater room.
3. Gyplap, fireproof gypsum sheathing, over outside of studs.
4. Fireproof Red Top Wool Blankets between stud spaces on outside walls and between attic roof rafters.
5. Perforated Rocklath and Red Top Plaster on interior walls, partitions and ceilings. For extra reinforcement, Red Top Metal Lath may be used as plaster

- base for ceilings in large living or other rooms. Also USG Metal Lath and Rocklath Plastering Systems.
6. Red Top Metal Lath and Red Top Insulating Wool as fire stops between studs and joists at fireplaces, chimneys and stair walls.
7. USG Asbestos Shingles or USG Asphalt Shingles on roof.
8. USG Asbestos Cement Siding as fireproof finish on outside walls.
9. Sheetrock as wall finish in playrooms, extra attic rooms, basement storage and tool rooms.



PROTECTING YOUR HOME AGAINST THE WEATHER

THERE ARE MANY FORMS of weather protection which should be built into your home. Carefully done, they add very little to the cost, yet they repay themselves many times in fuel savings, comfort, and lower decorating and maintenance costs.

The Roof Over Your Head

Let's see how this is done by starting at the top of the house and working down and inside. First comes the roof, which may be either flat or pitched, depending on the architecture of your home.

If your home is of the flat-roofed type, your builder will apply built-up roofing consisting of alternate layers of asphalt-impregnated felt and hot asphalt mopped on. This will be topped off by an application of gravel or

mineral-surfaced roll roofing to protect against the sun's rays and the action of ice, snow and rain. Sometimes the flat roof of a house is designed for use as a porch. In that case, the built-up layers will be topped with material which can be walked on without danger of puncturing the roofing.

On sloping roofs a variety of materials may be applied, but fireproof shingles are recommended here, because otherwise there is a real fire hazard from sparks or burning embers. A good roof shingle ought to have these qualities:

Ability to keep out water.

Long life.

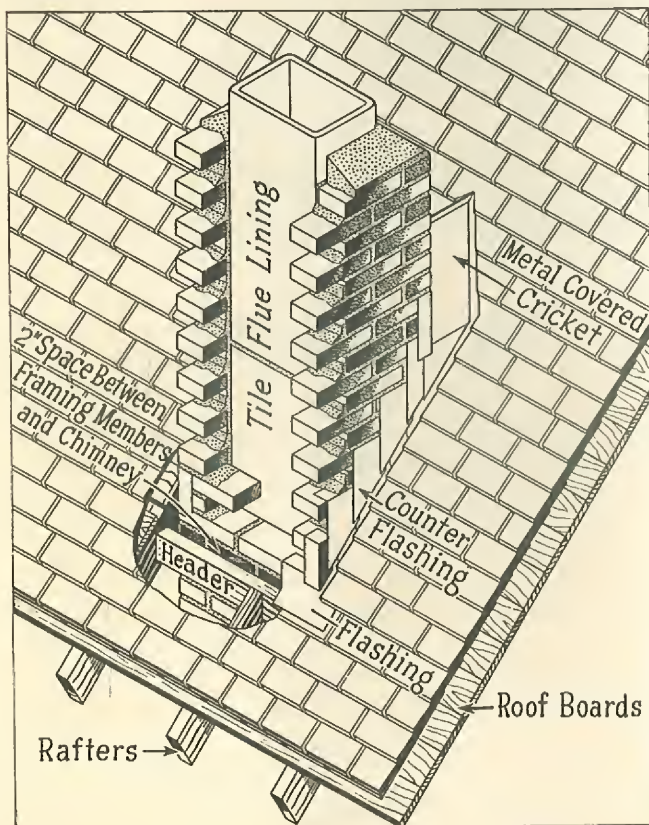
Ability to resist fire.

Attractive color and design.

There are four types of shingles which meet these requirements: asbestos, asphalt, slate and tile. Of these, the most practical are generally asphalt or asbestos. Slate and tile, while excellent roofing materials, are usually beyond the budget of the small or medium sized home. Wood shingles, while widely used, are not fire resistant and they are banned as a roof material by local ordinances in many localities.



Asphalt shingles protect against burning embers and carry Underwriters' Class "C" label. This attractive house in White Plains, New York, designed by Victor Civkin, Architect, has USG Asphalt Shingles on the roof.



This illustrates the proper use of flashing and counter-flashing to make a water-tight roof around the chimney. Copper is generally the best material to use for flashings, because it costs but little more than tin or sheet metal and will be permanent, whereas the latter will rust out. It is difficult to replace flashing after it has failed.

When selecting a roof, remember that you are buying color and design as well as weather protection. The roof is literally the crown of your home and you will want it to combine gracefully with its architecture and be an attractive part of your exterior color scheme and landscaping.

Asphalt and asbestos shingles today bring this kind of beauty, as well as protection. New durable colors, attractive blends running from the subdued to the more spectacular, textures that combine the beauty of the old with the fireproof permanence of new materials are some of the features that make these ideal roof materials for present-day homes.

A layer of good waterproof felt ought to be placed between the shingles and the roof boards. This helps the shingles keep your house dry. In the case of wood shingles, however, waterproof membrane must not be used; and the roof boards should be applied with spaces between each board. This type of shingle requires ventilation from underneath to prevent the shingles from rotting.

Angles and corners which a shingle cannot protect from the weather occur on every roof. For example, your chimney passes through the roof, and if not properly protected at this point, the roof will develop a leak. Protection here is called "flashing." Flashing is made of sheet metal, either copper or galvanized iron, with the joints carefully soldered.

If there is a "valley" in your roof—between a dormer roof and the main roof surface, for example, it should be protected from the weather with sheet metal flashing or special "starter strips" made for this purpose.

Your house should also be protected against the weather at the eaves. Otherwise, water running down the roof will drip off onto the wall, staining it and perhaps, finding some crevice, leak into the house. The solution is to provide good gutters and conductor pipes to lead rain water to a cistern or sewer.

It is well to remember that copper gutters, while costing more, are permanent and never require maintenance.

Extra Protection on Outside Walls

The side walls of your house besides bearing much of its weight help keep out rain and snow, wind and sun, heat and cold.

The wall may be finished with brick, stone, wood siding, wood shingles, asbestos cement siding, asphalt siding, stucco. All of them will keep out weather if applied properly. Some of them are fireproof. You will find that the fireproof materials will give better service than the inflammable ones, for they not only add security but generally require less maintenance.

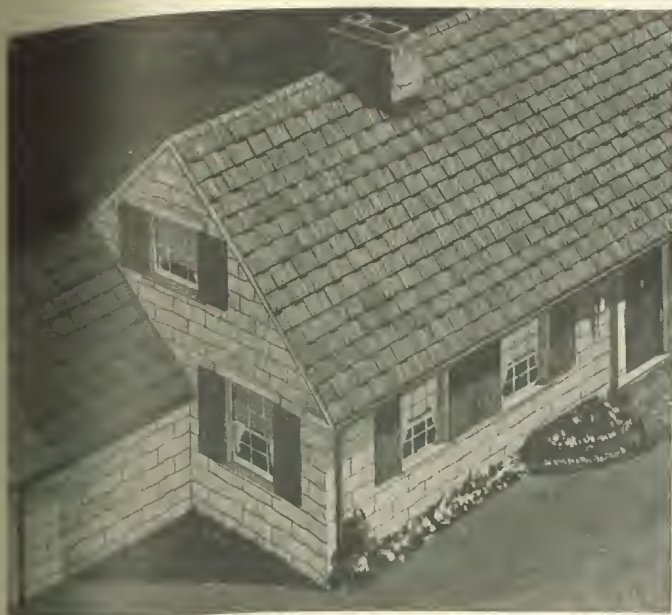
A new type asbestos siding, for example, has just been developed with a permanent self-cleaning waterproof finish. This eliminates painting and repainting bills.

To make sure the outside wall materials keep out water and wind, your house must be well sheathed. The ideal sheathing material provides a maximum of resistance against wind infiltration and moisture. Large sheets should be used to keep joints to a minimum and the joints should be so designed that they fit tightly together so there are no gaps between them.

Cypressum sheathing and the new type 2'x8' asphalt-coated Insulating Board Sheathing admirably meet these requirements.

Any opening in the wall such as a window or door is a potential danger spot. The frames of these openings should be tight fitting and have special weatherproofing attention at the tops and bottoms. This is done by flashing and caulking.

An important point to protect is the joint where the outside finish material meets the foundation. If the outside finish material has appreciable thickness, the foundation is built with a "step" in its outside surface.



Asbestos cement shingles are an excellent protection against roof fires, as they are made of fireproof materials and will not burn. This illustrates an attractive roof of USG Dutch Lap Asbestos Roof Shingles.



Showing another attractive house using USG asbestos siding on the walls. This home was designed by Samuel Ogren, Inc., Architects, Del Ray, Fla.

The outside finish material fits into this "step." This construction, known as a water table, eliminates a horizontal or downward sloping path into which water could run.

When a material like asbestos cement siding is used the lower edge of the bottom row of siding is placed so as to project at least one-quarter inch below the foundation top. Thus water will run off and not get over the top of the foundation wall.



Asbestos siding is real protection against the weather, and reduces upkeep costs, as it does not require painting, particularly the new type "Glatex" shingle, made by USG, which keeps clean like a china dish.

A YARDSTICK FOR INSULATION

INSULATION is considered a necessity in today's homes and rightly so because of the proven economy and comfort which it contributes.

But along with the universal acceptance of insulation, there is a universal confusion concerning it. It is often difficult for the architect, builder and home owner to pick their way intelligently among the many apparently conflicting claims for this material or that, and there is uncertainty regarding the amount of money to spend on insulation. This confusion is really unnecessary. Every type of insulation has its merits, and the choice of which to use depends upon the problems of the individual job.

In this section, it is our purpose to outline the requirements of the ideal insulating materials and to place before you a few simple facts to help you choose the right insulation for your house and to guide you in reaching a sound decision on how much money you should spend for insulation.

To do this we have developed a yardstick which we believe to be a fair measure of the worth of any type of building insulation. Our yardstick has 12 units as follows:

1. Heat Resistance

The primary function of insulation is to retard the flow of heat at a cost less than the cost of the heat that would otherwise be wasted. The ideal insulation, therefore, provides the greatest possible resistance to heat flow per unit of cost.

2. Range of Conductivities

Every home does not need the same amount of insulation, for this varies with climate and the insulation value of the other structural materials in the building. The probable life of the building and the cost of fuel also determine the amount of insulation needed. For this reason, the owner should select the insulation offering the resistance to heat flow which he needs for his particular insulation problem.

3. Assured Effectiveness

Once you have determined how much resistance your building requires, you should be automatically assured that the specified insulation provides it. You must have confidence in the conductivity value which the manufacturer assigns to his insulation. The material should be so constructed that install-

ing a thickness less than that specified is either impossible through instant detection or too laborious to be profitable. As wet insulation has lower heat resistance than dry, and insulation which remains damp for any length of time may result in rapid deterioration of the insulation itself or of the adjacent structural members, an ideal insulation must be resistant to moisture, unharmed by its presence and dry quickly. Finally, to be effective, the insulation must "stay put"—it must not shrink, swell or settle.

4. Durability

The ideal insulation must remain effective for the life of the building. It must be resistant to decay, rot, fungus growth and all other forms of deterioration.

5. Light Weight

The ideal insulation does not impose dead loads sufficient to require increase in the size or cost of structural members. Light weight also contributes to economy by reducing handling and installation cost. Weight is not necessary for insulation value.



Complete, controlled insulation does a great deal to help make temperatures more uniform throughout the house—helps reduce extreme differences at various room levels—differences which are especially bad when there are small children in the household.

6. *Low Heat Capacity*

A material of dense nature tends to hold heat and thus cause a lag in both heating and cooling. Low heat capacity is desirable because the building interior is then more quickly responsive to automatic temperature control. Low heat capacity is particularly important in keeping a house comfortable in the summertime, as otherwise the insulation will store heat which is given off into the house after the outside temperature cools.

7. *Resistance to Condensation*

In climates where protracted periods of cold weather are common, it is necessary that insulation be constructed so that it tends to prevent condensation from occurring and to protect itself against the effect of any such condensation which might occur. To prevent condensation, the ideal insulation requires a barrier to the vapor on its warm side, that is, the side which faces inward toward the room.

Further, the insulation should offer minimum resistance to the continued flow of vapor from the cold side of the barrier to the cold side of the insulation. The former may consist of some vaporproof material, such as aluminum foil or asphalt-coated kraft paper. The latter should be a vapor porous covering on the cold side.

8. *Ease of Installation*

The ideal insulation should be easily installed by the average building mechanic—it must literally be foolproof and tamperproof, and require a minimum of time and labor to put in place.

9. *Fire Resistance*

The ideal insulation should preferably act as a fire barrier. It should not burn, smoke or smolder even when heated to a temperature which will destroy it, and it should withstand high temperatures before its effectiveness as a barrier against fire is destroyed.

10. *Harmless to Health*

The ideal insulation should be free of odor and non-absorptive of odors. It should be vermin and insect proof or at least provide no sustenance for them. It should be free of dust to which allergic persons may be sensitive and otherwise completely harmless to humans when installed.

11. *Structural Value*

If an insulation material can displace a structural material without loss of its essential qualities as an insulation, it obviously has a decided advantage. However, this measure must be applied with care because under some conditions a structural insula-

tion is distinctly advantageous while under others it costs more per unit of effectiveness than a non-structural material.

12. *Cost*

This final unit is really dependent upon all the others combined, and it is actually the least important measure of value because it can readily be established that all forms of insulation worthy of the name cost nothing to the building owner over a period of time, as they pay for themselves through savings in fuel.



Lath marks in uninsulated houses show up quickly because the ceiling surface directly under each piece of lath is warmer than the surface between them—therefore, more dirt is deposited on these cooler spaces than on the warmer surfaces directly under the lath—the result, streaked ceilings.

When you insulate, less dirt is deposited on walls and ceilings, because they are warmer. And the dirt which is deposited is uniform over the entire area, thus tending to eliminate the unsightly streaking.

Thus we build the yardstick for the ideal insulation. However, unlike ordinary units of measure, its units are neither uniform nor constant, for the importance of each varies with the requirements of every job.

For example, resistance to condensation is not of importance in warm climates and durability is of no great value in a building erected for temporary occupancy. Therefore, each quality of insulation must be valued in terms of the combination of requirements which exist on each job.

With this qualification in mind, the foregoing yardstick applies, we believe, to all forms of building insulation alike, including rigid boards, flexible or blanket insulation, fill type and reflective materials; no one type in our opinion has an exclusive and universal advantage over the others. Each has its place in the building world. Each can show superiority over the others under different conditions. We have prepared this yardstick in order to provide you with an unbiased basis for comparing the various forms of insulation, so that you can decide which of them best solves your particular problem.

How Much Insulation Is Enough?

Insulation literally offers something for nothing because in almost every case it will eventually pay for itself in the fuel it saves. However, there is an understandable skepticism regarding the economies of insulation because claims have often been presented in such general and all-inclusive terms as to be unbelievable.

The reason for this confusion is that there is no general answer to the question "How Much Insulation Is Enough?". This question can be answered only in the terms of *your* house, *your* type of construction, the climate in which *you* live, and the fuel that *you* burn, for there are at least four important factors that influence the selection and use of insulation.

The factors are: 1. climate; 2. local fuel costs and the efficiency of your heating plant; 3. surface area in the building that can be insulated, in proportion to its total exposed area; 4. the natural heat insulating value of the construction itself.

Effect of Climate

Climate affects the value of insulation because it affects the fuel bill. For example, a typical house in Minneapolis without insulation might have a fuel bill of \$274.00 per year. The same house, burning the same fuel at the same cost in a heating system of equal efficiency, and located in a warmer climate, such as Baltimore, might have a fuel bill of only \$158.00 per year.

If we put the same amount and type of insulation in the side walls of this house in both cities, the Minneapolis owner might save \$57.00 per year on his fuel bill, while the man in Baltimore would save \$33.00. As each owner would pay substantially the same amount for the insulation, the family in Minneapolis would pay for its insulation in a shorter time than the one in Baltimore. Thus you can see how climate or locality affects the economic value of any given insulation in any given house.

Fuel Cost

Now let us assume that you are building a house in a city such as Detroit, where there is a wide variety of fuels at an equivalent range in prices. Let us assume that the house is of frame construction and that you are planning to use full thick Red Top Insulating Wool in the side walls, and that you have a total side wall area of 1,000 square feet.

If you burn oil in a modern oil-burning furnace at 10¢ per gallon, the Red Top Insulation would save you approximately \$34.00 per year over an uninsulated building. However, if the price of fuel dropped to 6¢ per gallon, this same insulation would show a net

return of just over \$20.00 per year. If you burn bituminous coal at \$4.00 per ton, fired by hand, the return would be approximately \$9.40 per year while if you were handling it more efficiently in a modern stoker, it would be a little less than \$8.00. Thus you can see the effect on the return of the insulation investment which different fuels and the efficiency with which they are burned will exercise.

Area to Be Insulated

The third factor that must be taken into consideration is the total area that can be insulated with a given type of insulation as compared with the gross exterior surface area of your home.

Your fuel bill depends upon the total heat loss from the house, whether the heat goes out through windows, through cracks around doors and windows, through wide open doors or through the side walls, roof or floor. Obviously, a building insulation, such as insulation



The photographs above and below show economical and efficient methods of insulating your home. Material above is Weatherwood Insulating Sheathing. Below is shown Weatherwood Plaster Base. These products combine efficient insulation with important structural functions, as they are 2-in-1 materials.



board or insulating wool, can reduce the heat loss only through sides, roof or floor.

For this reason it is necessary to consider, in addition to building insulation which goes into the side walls and roof structure, other forms, such as storm windows and weatherstripping.

There is considerable variation in the ratio of wall and roof surface to the ratio of glass areas and the amount of infiltration in buildings of different type and design. Thus the proportionate investment in building insulation and these other types of insulation depends upon the kind of house that you are building.

Insulation Value of the Structure

Any kind of wall or roof that forms a shelter also acts as a heat barrier of greater or less effectiveness. Therefore, the value of an insulation material added to the other construction of your home is influenced by the quality of the construction which you have designed before selecting the insulation. An insulation of high heat resistance added to a good solid wall will have less relative effect on the final fuel bill than a good insulation installed in a poor wall.

Various Types of Insulation Needed

The variable factors which make the choice of insulation such an individual problem point out why it is necessary to have different types and thicknesses of insulation. Obviously, the owner of our typical house in Minneapolis can afford to invest more in insulation than the owner of the same house in Baltimore, if both expect to pay the cost of their investment in the same length of time.

There are other factors, however, which make it desirable to offer insulation having various degrees of effectiveness. Along with insulation you may want to get decorative effects or may want to insulate at maximum economy. In such cases the insulation should also have decorative qualities or structural value. Or you may be erecting a home for rent in which the individual tenant may be required to supply heat or the overall limitations of your budget may not permit as much insulation as you might like to include. Any of these circumstances would warrant the use of an insulation with somewhat lower efficiency or a type specially adapted to suit your individual requirements.

Saving in Heating Equipment

Another aspect of the economics of insulation centers around its effect upon the size of heating or air conditioning equipment.

The use of insulation reduces the maximum heat loss of a house and so it correspondingly reduces the required

size of boiler or furnace, as well as radiators in individual rooms or of ducts and registers which deliver warm air.

There is a marked difference in the cost of boilers or furnaces when the sizes of the combustion chamber or fire box are reduced from one design to the next one below. The difference may be as much as \$100.00 to \$150.00.



New types Fiberglas insulation (Red Top Insulating Wool Blankets) provide maximum insulation efficiency at economical cost. This particular type of insulation is specially made so that it stays in place and has a waterproof barrier on the "warm" side of the insulation to protect against condensation.



The use of semi-thick Red Top Insulation, for example, instead of 1" or of the full thick type instead of the semi-thick blanket, may make it possible to save more on the boiler than the extra insulation will cost.

For this reason when selecting insulation you should take into consideration savings made in the original cost of the heating plant, as they are often very substantial and may pay for a large part of the entire insulation job.

Investment Value

Attractive as a high percentage of returns on the insulation investment may be, it is not as important in the long run to the home owner as the actual number of dollars which he pockets every year. Naturally, the highest return on the investment is often shown by the poorest insulation. A minimum of insulation, say 1" thick, may show a higher return than maximum insulation that will be of full wall thickness.

The latter will seldom cost three times the price of the 1" because labor costs are identical, and even the price of material does not stand in that ratio, but obviously the first inch of insulation does the biggest job, and, therefore, it pays the highest return though not the greatest number of dollars annually.

While there are cases where minimum insulation and a high return is the proper investment, there are others in which the owner is shortsighted if he does not select insulation of greater efficiency because over a period of years it will enable him to pocket a total sum much larger than he would save with a minimum job.

Insulating for Summer Comfort

In addition to reducing winter fuel bills, insulation contributes greatly to genuine summer comfort, provided the right type and style are chosen, and certain rules of ventilation are carefully followed.

If you have ever climbed on the roof of a dwelling in summer, you have experienced the surprisingly high temperatures which occur on the shingles or slate. These temperatures will run in the neighborhood of 140 degrees on warm, sunny days. Because the higher temperatures reached on roof structures than on side walls, you are warranted in using considerably more insulation on the upper levels of your house than would be justified for winter fuel savings alone.

Even if insulation is installed between the rafters, some of the summer roof heat always gets into the attic because no insulation is a complete barrier to heat

movement. Therefore, if the attic is not ventilated, it accumulates this heat, to which is added the heat which rises from within the house, as the lower rooms become warm. The attic thus acts as a heat storage reservoir, gradually dissipating its excess heat downward into the house, as well as out through the roof again at night or when the outdoor temperatures are lower.



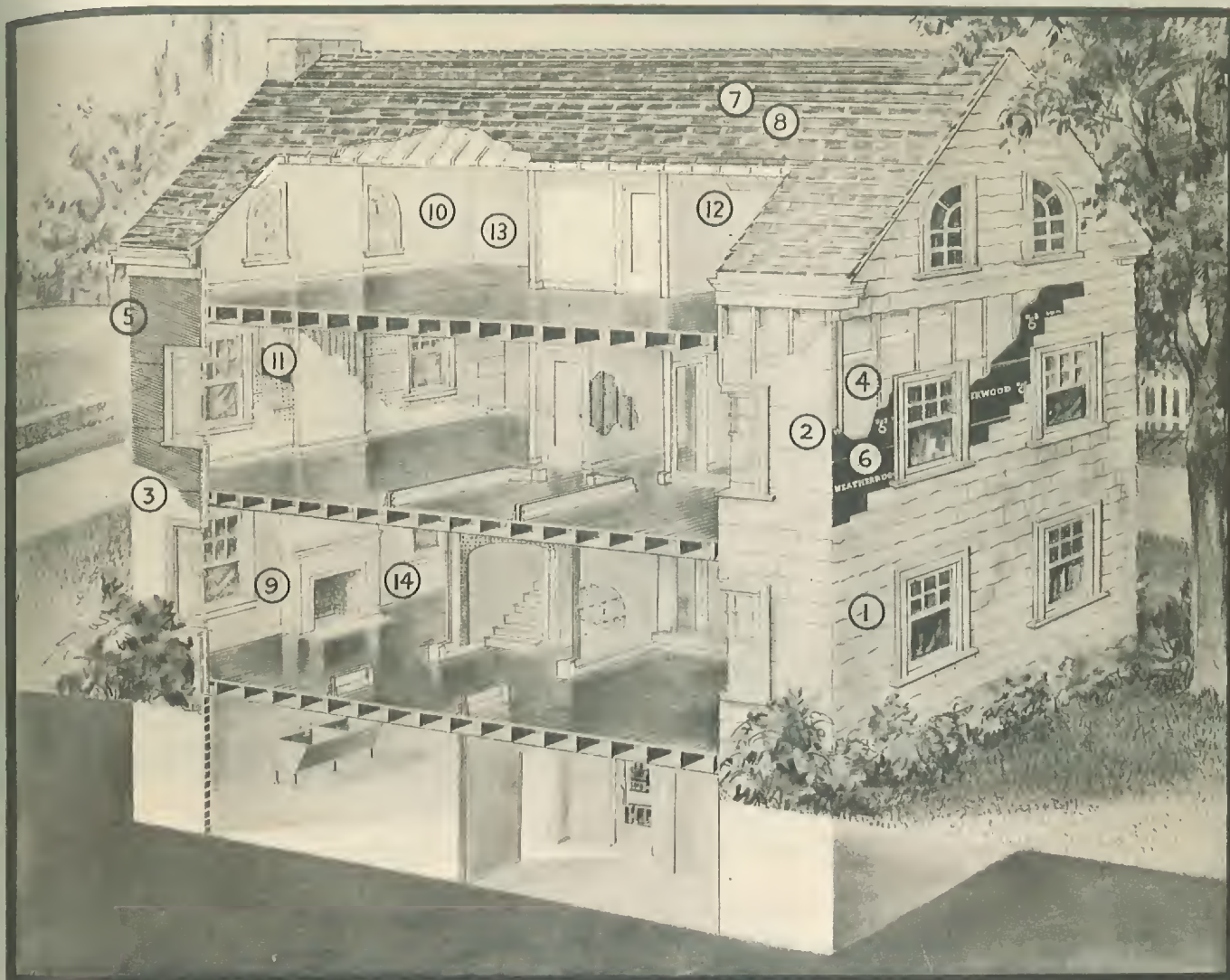
Permanent louvers or vents near the ridge line in the attic, with a fan to provide cross circulation, help eliminate excess heat.

Thus there are two factors to consider in the use of insulation for summer comfort. The first is the use of adequate ventilation in your attic in summer, the second the use of an insulating material of *low heat capacity*—in other words, an insulation that will not accumulate heat and store it for long periods.

Attic Ventilation

The simple way to provide attic ventilation is to keep the attic cross ventilated, not only during the day, but always at night. This cross ventilation should be at the highest possible point in the attic, preferably near the ridge line, and may be obtained by permanent louvers or similar vents. In addition, a fan may be provided, so that this ventilation is automatic and constant.

Normally, when the attic is not used for living purposes, it is most economical to install the insulation across ceiling joists of the top floor, and below the attic floor surface. However, if the attic is used for living, the insulation may extend over the rooms, so long as it does not reach up into the peak of the roof, where a chamber should be left for ventilation to the louvers or vents at the ends of the gables.



WHERE USG PRODUCTS PROTECT AGAINST WEATHER

FOR OUTSIDE WALLS

1. U S G Asbestos Sidings
2. Gyplap—The Fireproof Sheathing
3. Oriental Exterior Stucco
4. Red Top Insulating Wool Blankets
5. Red Top Stucco Lath
6. Weatherwood Asphalt Coated Sheathing

FOR THE ROOF

7. U S G Asbestos Shingles

8. USG Asphalt Shingles

FOR INSULATING YOUR HOME

9. Insulating Rocklath
10. Insulating Sheetrock
11. Red Top Insulating Wool Blankets
12. Weatherwood Blendtex
13. Weatherwood Building Board
14. Weatherwood Insulating Lath



HOW TO PROTECT AGAINST CRACKS . . . INSURE STRONG WALLS AND CEILINGS

IT IS IMPORTANT for you to appreciate fully the high cost of cheap construction, for the finest planning is useless if your home is shoddily built. For example, a badly built foundation may settle, changing the pitch of the gutters, causing water to back up and flow beneath shingles, thus leaking into the living quarters and spoiling your decorations. Improper foundations and faulty framing also cause plaster cracks, windows that are hard to open, doors that will not latch securely and uneven and squeaky floors.

Strong walls and ceilings, protection against disfiguring cracks, start with the foundation, and no house is stronger than the base on which it rests. The foundation of your home must adequately support the load it carries and resist pressure of the earth around it. The foundation should also be watertight and constitute a barrier against termites.

The local building code generally determines the thickness of the foundation wall. The minimum thickness

for a stone foundation wall is generally 15" although walls 18" to 24" thick are more easily laid. For brick, the Bureau of Standards accepts 8" thickness for two story houses, although many codes require 12". Concrete walls may be, in some cases, as little as 8" thick but a 10" or 12" wall is better practice.

The depth of the foundation is determined by the frost line. The building must have a stable base and ground which freezes heaves and shifts. In cold regions the foundation may therefore be as deep as 5' to 7', often extending below the level of the basement.

The importance of adequate footings cannot be over-emphasized. "Footings" is the name given the base of the foundation where it is broadened to form a larger bearing surface against the soil beneath. The width of the footing varies with soil conditions and the size of the house and should finally be determined by your architect when he knows the load the foundation must bear and the nature of the ground on which it rests. In the average house with ordinary soil conditions the footings should extend 4" to 6" beyond both sides of the foundation wall and to a depth of 8" to 12" beneath it. If your lot consists of made land, or loamy soil the footings should be reinforced with steel rods and this reinforcing should also be made at spots where the footing is undermined to permit the entrance of pies, conduits, etc.

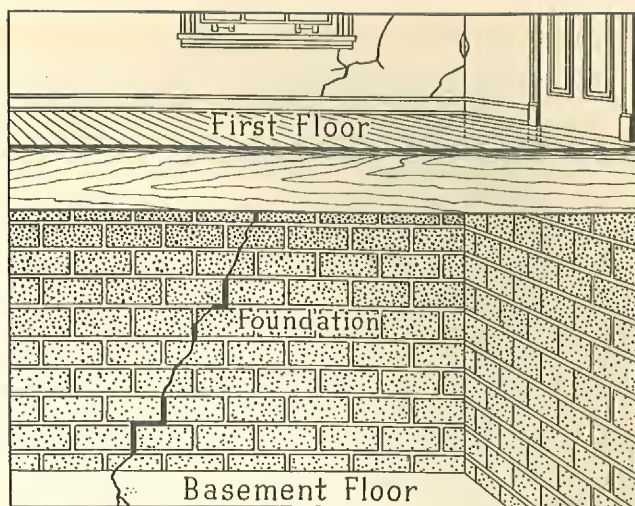
A Dry Basement

For a permanently dry basement you must naturally guard against cracks. This requires (1) proper thickness of foundation walls, (2) proper mixing of mortar or concrete, and (3) proper footings. If your home is being built on damp land install a 4" drain tile around the outside of the footings, and be sure to specify that the tile has a definite place to drain to—simply putting tile around the foundation is not enough.

Proper workmanship is all important in dampproofing the basement, particularly if it is made of brick or masonry. A good way to provide a waterproof wall is to specify the use of a mortar composed of hydrated lime, Portland cement and sand. The correct proportions are one part by volume of lime putty to one part Portland cement and six parts sand, properly laid to thick flat bed joints and not furrowed with a trowel.

There should be a drain from the basement, connected with the sewer or with a pit containing coarse gravel, so that if water comes into the basement in quantity it can drain off. If you connect the drain with the sewer, be sure to provide a trap to prevent sewage water from backing into the basement.

The sign of a leaking basement is standing water on the floor. The moisture or water which is sometimes

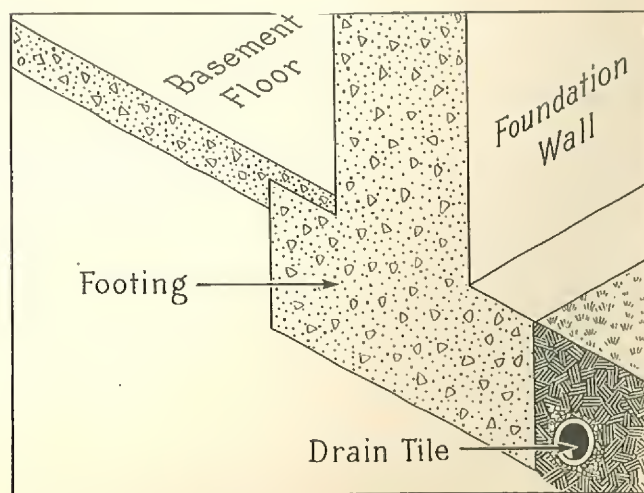


This illustration shows the result of inadequate footings under the foundation wall, a construction fault common to many houses.

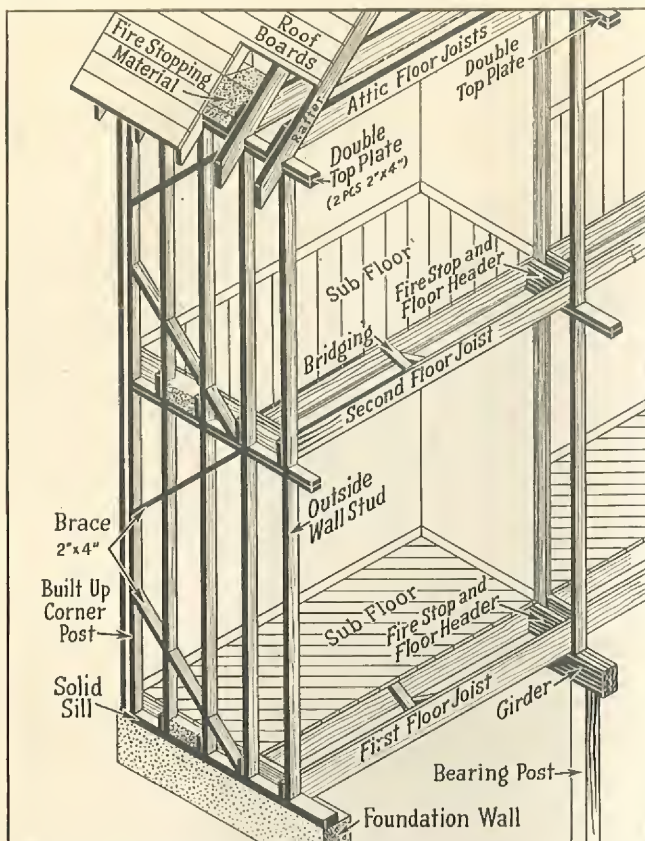
found on basement walls, however, is not necessarily from leaks, but may come from the condensation which occurs when the warmer basement air comes in contact with the colder walls. Furring out the walls and applying Sheetrock will remedy this condition.

The best way to keep subterranean termites out of the house is to prevent foundation cracks. A good concrete wall, or full joints of cement mortar, are as effective against the entrance of termites as against the entrance of water.

Tunneling along the foundation wall from the ground to wood is another way in which termites sometimes enter a house. A termite shield between foundation and sill is an effective way to stop this type of invasion.



This drawing shows in detail a foundation wall footing properly constructed. Notice the square base which provides an even, firm bearing surface, and the drain tile to carry off excessive soil water.



The modern adaptation of the braced frame used in old New England houses in every way fits our present-day building needs.

A Strong Skeleton to Rest on a Firm Foundation

The next step in acquiring lastingly strong walls and ceilings is the framing, the skeleton of the house.

Wood framing is the prevalent type of construction in this country, for the majority of brick or masonry walls are veneers. The load of the house in this type of construction is carried by the framing, and the masonry is simply a screen to give a desired architectural effect.

The framing must be strong enough to carry its own weight plus that of the roof, floors and walls, the movable materials stored within the house, and the people who occupy it—all with an ample factor of safety. It must resist wind and in some areas earthquakes. It should be built so that there is a minimum of shrinkage or warping, and so that the effects of any that may take place are not transmitted to interior walls or ceilings. The frame should also be built to resist the passage of fire, as discussed in the previous chapter.

There are three types of wood framing generally used—braced frame, balloon frame and platform frame.

The braced frame is a modern adaptation of the framework used in the old New England houses and in every

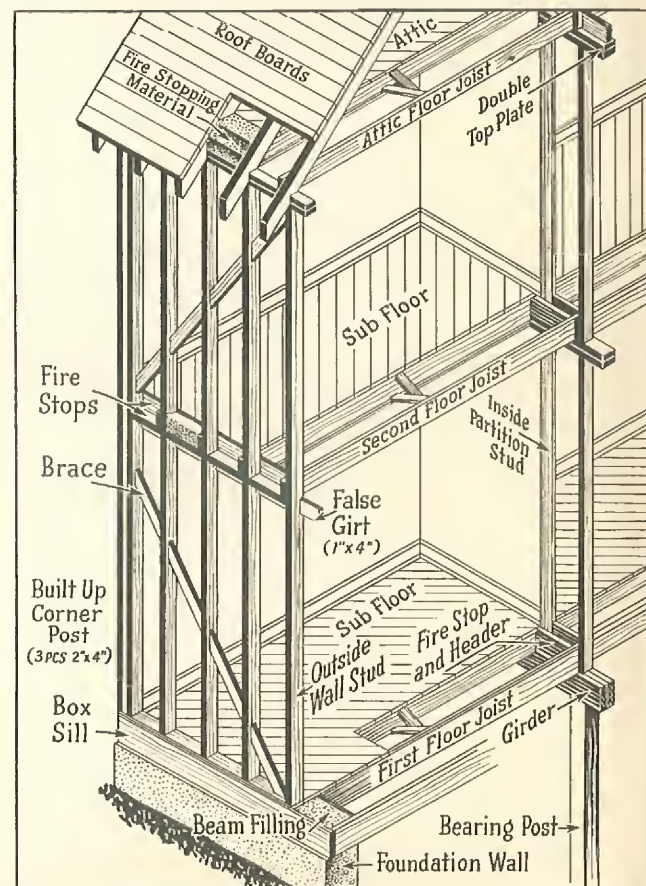
way fits our present day building needs. The illustration on this page shows a correct way of building it.

The distinguishing feature of the balloon frame is the fact that the wall studs are continuous from the sill at the foundation to the top plate. Corner braces and fire stopping in the walls provide rigidity and fire resistance, while the faults traceable to shrinkage are largely solved by reducing and equalizing cross sectional lumber. The illustration below shows the right way to build the balloon frame.

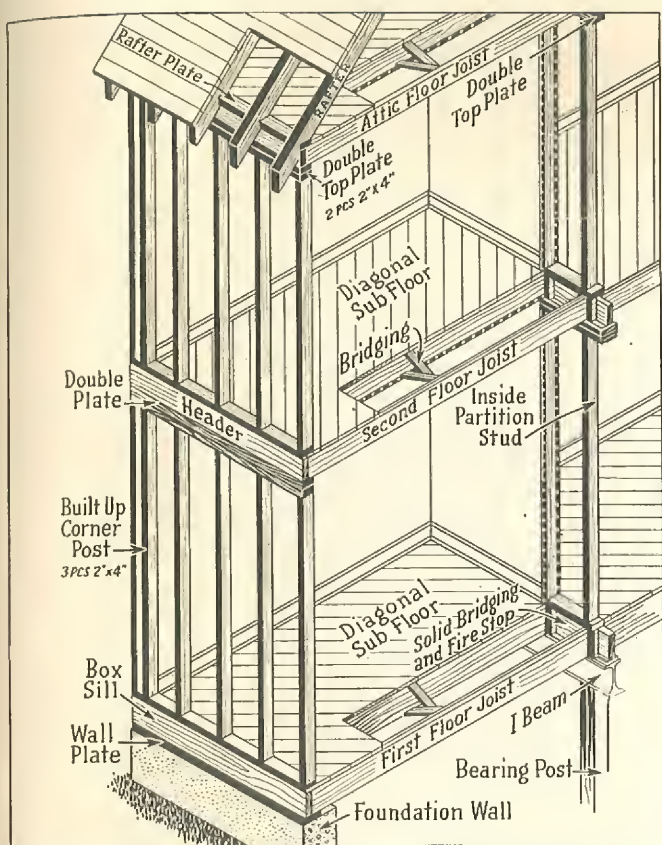
The platform frame is so named because the first floor is built on top of the foundation walls as though it were a platform. The outer ends of the floor joists rest on a sill while the inner ends rest on an I beam on which has been placed a two inch plank. The subfloor is run up another story to support another platform for the second floor. This is repeated once more for the attic. Platform framing is illustrated on page 61.

The Importance of Supporting Timbers

Your house needs stiffness to prevent sagging and to keep the framing from moving. Stiffness can be acquired



This illustrates a proper construction of the balloon frame. In this type of framing, the wall studs are continuous from the sill at the foundation to the top plate. Notice the bracing and fire stops, which are necessary for rigidity and proper protection against fire.



This illustration shows the proper construction of the platform frame, which gets its name from the fact that each floor is a platform supported by independent partitions.

only through the strength which supporting timbers provide. These supporting members are:

The Sills. The sill furnishes a means of securing the superstructure to the foundation and provides a nailing surface for joists. There are two types of sills, the solid and the box sill. The former should be anchored to the foundation with bolts, the latter by concrete which also seals the joint between the framework and the foundation. When a solid sill is used the joint between it and the foundation should be sealed by placing the sill on a bed of mortar.

The Joists. The joists furnish support for the floors. Their size depends on their span and the load they must bear. Improper size and too great a span are frequent causes of sagging, squeaky floors, rattling light fixtures and cracked plaster. When it is necessary to cut through joists for plumbing, stair wells, etc., the strength thus lost must be regained. The illustrations on Pages 62 and 63 show how it is done.

Bridging Floor Joists. Bridges are small braces that extend crosswise from the top of one joist to the bottom of the next and in a continuous line the length of the house.

Sometimes omitted to "save" costs, they are an essential of good construction, because their purpose is to keep joists in alignment and to distribute to all joists any exceptionally heavy loads or jolts applied to any one or two of them. Bridging is as necessary on second floor joists as on the basement.

It is important that bridging is nailed to the joists both top and bottom. It is usually the practice *not* to nail bridging to the under side of the joist *until* the rough flooring is laid. This is desirable because joists should not receive the stiffness bridging gives them until the rough floor has aligned them properly.

However, bridging should be nailed to the under side of the joists before lath is nailed over this surface. If this is not done the bridging members are quite useless.

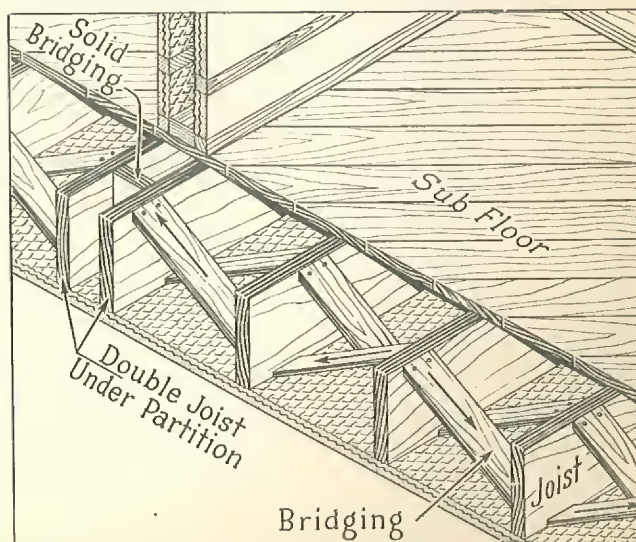
The Importance of Proper Sub-Floors

The sub-floor is a rough under-floor, nailed to the joists, over which the finished floor is applied. A proper sub-floor results in a good finish floor and, especially on upper floors, adds stiffness to the structure.

Proper application requires the sub-floor to be laid diagonally over the joists, and securely nailed. Creaking and squeaking of floors are usually caused by nails working up and down in their sockets. Bulging, humpy floors are also generally the result of an improperly nailed sub-floor.

Building Against Shrinkage

Although shrinkage is the natural result of wood drying and certain difficulties in many houses can be traced to it, it is possible to avoid most of the construction faults which it causes.

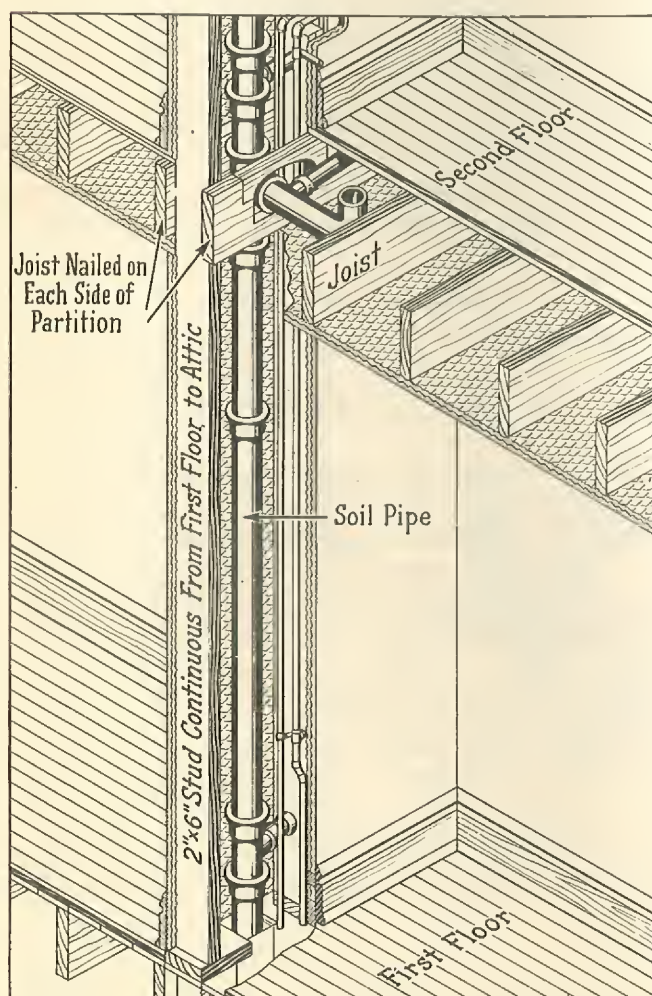


Bridging illustrated here is necessary on both basement and second floor joists, because it keeps joists in alignment and evenly distributes to all joists any exceptionally heavy loads or jolts applied to one or two of them. It is important that bridging is nailed to the joists both top and bottom.

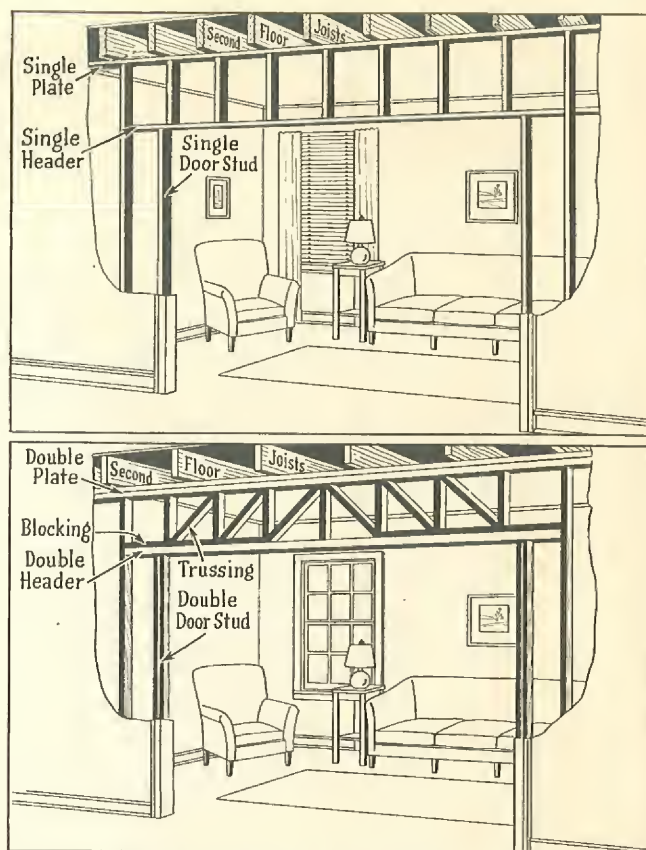
The first precaution against shrinkage is to use seasoned lumber. Water exists in lumber in two forms—as free water and as moisture absorbed within the cell walls. When the free water dries, it merely reduces the weight of the timber, and when the water within the cell walls evaporates, shrinkage begins. Since green lumber with a water content of 25% to 30% shrinks much more than seasoned lumber with a moisture content of 15%, the importance of using seasoned lumber is readily appreciated.

The use of seasoned lumber, however, is not enough. The frame must be built to allow for and neutralize the effects of shrinkage. Just as steel contracts and expands with alternate cold and heat, so does lumber take on and give off moisture with changing humidity.

It is not practical to build with lumber as dry as artificial heat can make it for it would re-absorb moisture



This shows one method of building a strong partition for carrying pipes: one not weakened by the necessary cutting and notching. Two 2" by 6" partition studs are continuous from first floor to attic to allow ample room for all pipes without loss of strength to the wall. The joists at each side of the partition are nailed to each stud to assure ample support for the floor.



Framing around the opening in the top illustration is insufficient, and will cause plaster to crack between the top of the opening and the ceiling because the single plate and single header are unable to carry the overhead load without sagging. The bottom illustration shows the correct method of framing large openings. The headers have been doubled and set on edge, as have the plates and door studs. Two by four inch truss members and blocking give additional strength and rigidity to the framework. Construction such as this in the first place saves annoyance and expense later.

from the air during the time of building. So, there is some unavoidable drying and shrinkage after the house is finished because of the artificial heat from the furnace.

If you minimize and equalize, the amount of horizontal framing lumber appearing in cross section on outside walls and bearing partitions, you will largely eliminate the effects of this shrinkage. This is true because most of the shrinkage in lumber occurs across rather than with the grain.

This means that where it is necessary to use lumber across the grain, say at the center post, a similar amount of lumber of the same thickness must be used across the grain on the other foundation. Thus settlement due to the shrinkage of lumber is equal throughout the building.

It is important to guard against shrinkage because excessive or uneven shrinkage is one of the major causes of plaster cracks and other house ills.

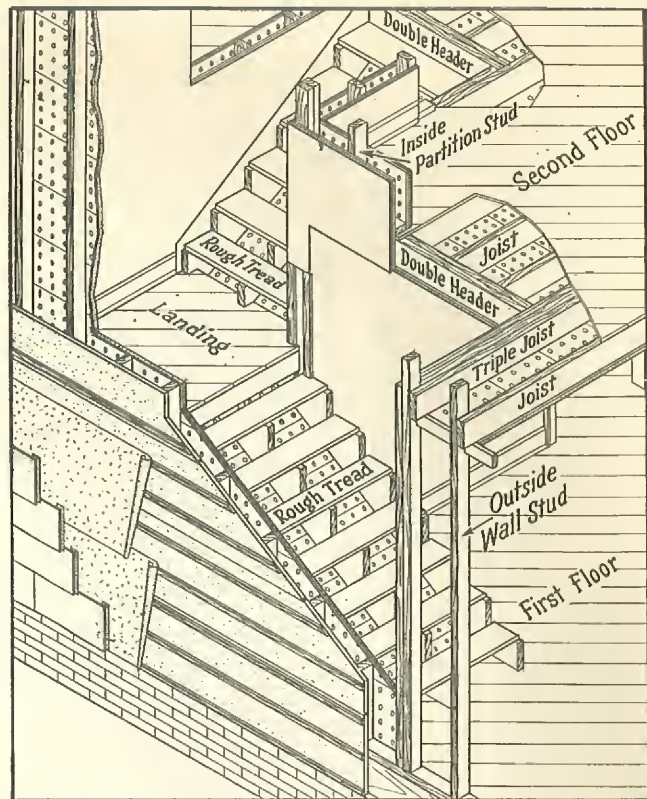
Wall and Partition Framing

As we have stressed throughout this chapter, walls must be strong enough to carry weight and resist winds and also to avoid partial failures, of which cracked plaster is a common symptom. This requires proper framing, nailing and bracing for both bearing and non-bearing walls and partitions.

The bearing partitions or wall is one which supports a load from above. A non-bearing wall acts only as a screen or enclosure. The illustrations on this page show the importance of proper framing and bracing.

Bathroom Framing. One method of building a strong partition to carry pipes. 2 x 6 partition studs, to provide ample space for the piping, are made continuous from first floor to attic. Joists at each side of the partition are nailed to the studs assuring ample floor support. Notice how the joist is notched out for the pipe and the piece replaced to provide nailing surface for the floor.

Framing Large Openings. Above—it is likely that plaster cracks will appear over this opening because of insufficient framing. The single plate and header are unable



When it becomes necessary to cut away one or more floor joists as in the case of an opening for a stairway, good practice calls for framing around openings similar to that shown here, which compensates for the strength lost in cutting off these joists for the openings.

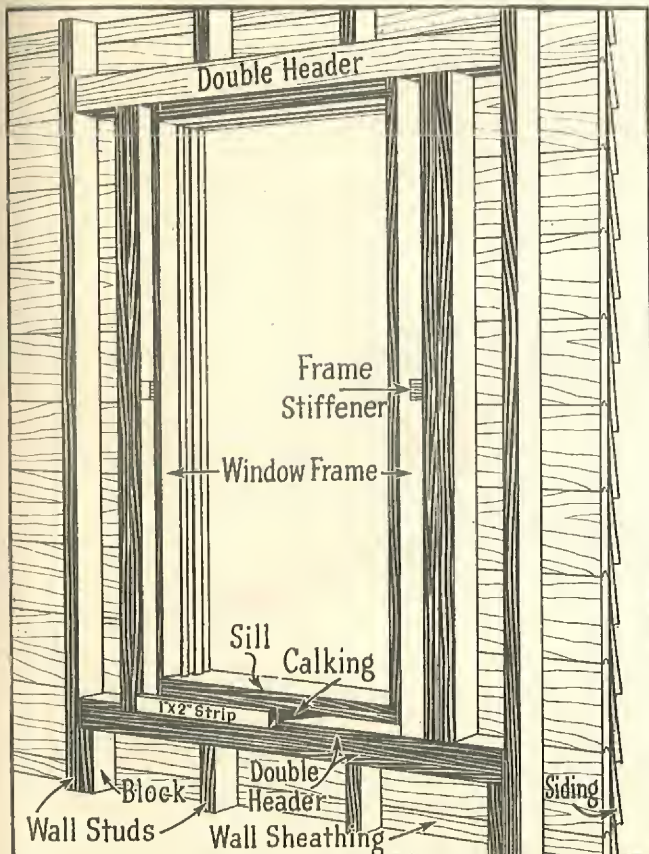
to carry the overhead load without sagging. The illustration on page 62 shows how to eliminate expensive redecoration. The headers have been doubled and set on edge as have plate and door studs. The 2 x 4 trusses and blocks give additional strength and rigidity.

Bracing and Sheathing. Sheathing while primarily offering wind and weather protection and insulation also adds bracing, but it should not be expected to provide the bracing strength which the frame itself should have. The illustration shows how corner bracing should be used to give additional stiffness to the structure.

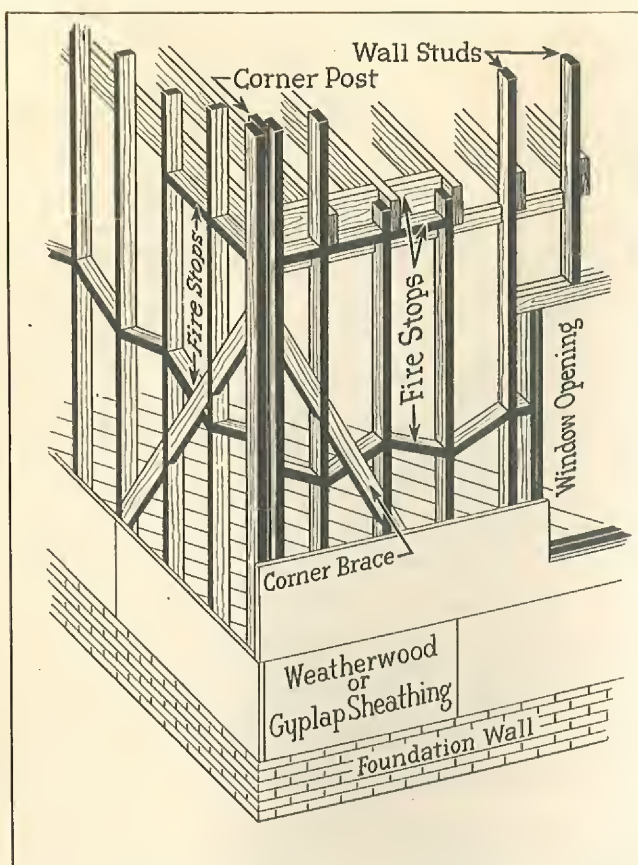
Window and Door Framing. This illustrates the proper way to frame around window openings. Notice the use of double framing members—double headers and double window studs. Also notice the stiffeners which help keep the frame straight and eliminate one cause of binding windows. Caulking stops a great deal of air infiltration.

The Importance of Good Plastering

We have shown that bad construction causes weakness which the finest lath and plaster cannot correct. It is also true that poor lath and plaster or their improper application will cause unsightly walls and ceilings.



This illustrates the proper way to frame a window opening. Notice the double header, double window stud, and frame stiffener. These replace the strength lost in cutting away the studs to make the window opening.



The use of sheathing material, such as Gyplap Fireproof Sheathing or USG Weatherwood Insulating Sheathing, makes a tighter house, protects against wind infiltration, and helps brace the building.

To be good, lath and plaster must do these things: The lath must provide a firm, rigid base for the plaster. The combination of lath and plaster should afford protection against the spread of fire. There should be a strong natural bond between the lath and the plaster to minimize the chance for plaster cracks, and to prevent plaster from falling off. The walls should give a hard finish ready for any type of decoration. The walls should retard rather than magnify sound.

You should insist on quality in your plastering specifications. Here is a part of your building in which you cannot afford to compromise for 80% of the interior area of your home is made up of plastered walls and ceilings. The right lath, good plaster and quality workmanship are essential for the attractive, durable walls and ceilings which good plastering provide.

Some Important Facts About Plaster Bases

Lath is the base to which plaster is applied. There are four types of plaster bases commonly used in home building. They are metal lath, gypsum lath (Rock-lath), insulation lath and wood lath. There are also certain tiles, such as gypsum partition tile, over which

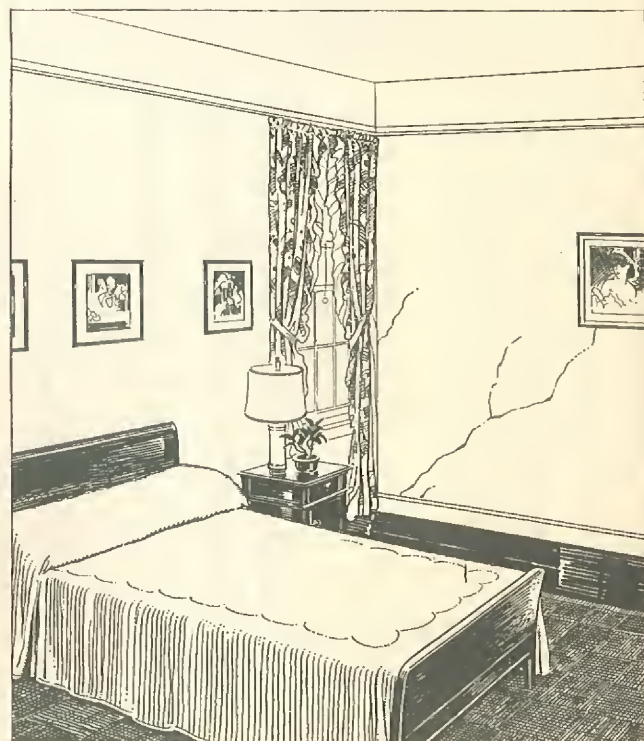
plaster is applied and which are used frequently in furnace rooms, or as walls between house and garage.

Metal Lath. There is no finer plaster base than metal lath. Although costing slightly more than other types, it brings with it a great deal of extra value. Metal lath offers real protection against cracks and streaks and when properly plastered offers great resistance to fire.

Because of its rigidity after plaster is applied, metal lath is an excellent plaster base for large ceiling areas. When covered with three coats of wood fibre plaster it is accorded a one-hour fire rating by the Underwriters' Laboratories for both walls and ceilings.

There are certain parts of every house which require metal lath. For example, to protect against plaster chipping from exposed corners, and cracking in recessed ones, metal corner beads should be used on the former and Cornerite on the latter when wood lath, gypsum lath or insulation board lath are the plaster base. Arched openings are also better when made with metal lath arches, for they are true arches, rigid and more economical.

Also use metal lath on stairways, behind chimney breaks and kitchen ranges. Unless specifying a Resilient



Plaster cracks are often caused not by faults in the plaster, the base, or their application, but in faulty construction. The condition noted in this picture is the result of one or more of the following causes: faulty footings, too small girders or too few posts, a wide opening in a wall below this one improperly framed, joists of insufficient size or not doubled under the partitions.

or Bridjoint Plastering System, metal lath strips are recommended as reinforcement against cracks on ceilings, and also at door and window openings. Used in this way, they provide reinforcement and assure a proper thickness of plaster over the lath.

Gypsum Lath (Rocklath). Gypsum lath is now one of the most popular and widely used types of lath. This rapid growth is due to its excellent qualities as a plaster base, its fireproofness and its low cost. A completely plastered gypsum lath wall costs no more than a wood lath wall.

Rocklath is especially acceptable in perforated form—that is, with circular holes spaced at regular intervals to allow plaster to penetrate and key at the back. This type of lath holds plaster with a double grip—the welded grip of the natural bond between gypsum lath and gypsum plaster, plus the riveted grip of the plaster forced through the perforations. Furthermore, Perforated Rocklath helps assure a proper thickness of plaster.

Rocklath is fireproof—it will not burn and tests show that partitions made of perforated gypsum lath and plaster qualify for a one-hour fire rating.

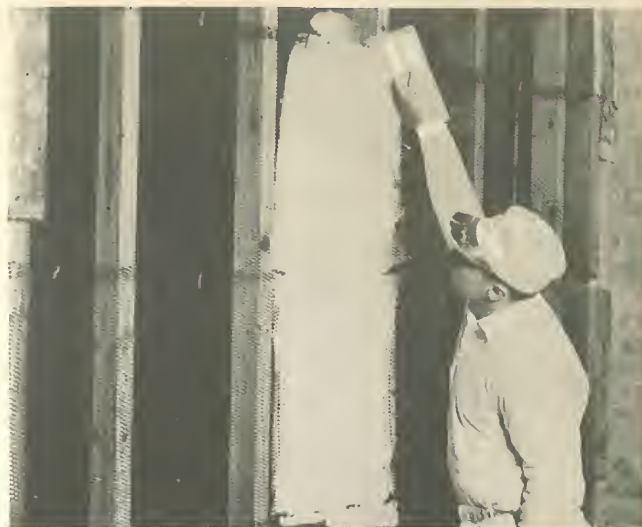
Rocklath is also made with a backing of bright aluminum foil to provide insulation. This product combines economical, efficient insulation with the excellent and distinctive qualities of gypsum lath as a plaster base.

Insulating Lath. Insulating lath is a double duty product, for in one material it provides insulation and plaster base. It is, therefore, one of the most economical forms of insulation, and for this reason is often used on low cost homes where insulation is necessary, but where budget requirements dictate economy in its selection.

Insulating lath costs more than gypsum lath so that its use is generally not justified if there is mineral wool insulation within the walls. As insulation is not required on interior partitions or lower floor ceilings, we also suggest that gypsum lath or metal lath, rather than insulating lath, be used in these areas in order to obtain the fire protection and extra strength they provide.

When insulating lath forms the plaster base it is advisable to use a type with reinforced joints as an added precaution against plaster cracks.

Wood Lath. For years wood lath was practically the only type of lathing material available in this country. In recent years, however, it has been rapidly supplanted by other types, previously described, which provide greater rigidity, superior fire protection, stronger walls and ceilings, insulation against heat and cold and easier application. These also largely eliminate the streaking of lath marks so common with wood lath.



Metal lath offers real protection against cracks and streaks, and when properly plastered offers great resistance to fire. Because of its rigidity after plaster is applied, metal lath is an excellent plaster base for large ceiling areas.



Perforated Rocklath holds plaster with a double grip, the welded grip of the natural bond between gypsum lath and gypsum plaster plus the riveted grip and plaster key behind the regularly spaced perforations on the surface of the lath.



These beautiful walls and ceilings were obtained with Red Top Gypsum Plaster over Rocklath on the interior partitions. On the interior walls Red Top Plaster was applied over Pyrobar Partition Tile. The ceilings are Red Top Plaster over Red Top Metal Lath.

Wood lath presents considerable fire hazard with its rough, splintery surface. To prevent "lath cracks" it needs to be thoroughly wetted before plastering—which is rarely done. Wood lath also swells from moisture, which may cause it to pinch off the plaster keys, wrecking the bond of the plaster to the wall; and it also has a tendency to warp and buckle.

Plastering Systems for Better Walls and Ceilings

Metal Lath and Perforated Rocklath have greatly improved plaster walls and ceilings by eliminating the troubles caused by wood lath.

However, there are sometimes blemishes which come from neither faulty material nor poor workmanship, but from movements of the framing which are transmitted directly to the plaster wall.

To neutralize the effects of this warping or deflection, plastering systems have been developed which take lath and plaster off the framing—provide a "floating" wall for them.

With Rocklath and Metal Lath Resilient Systems, for example, the lath is not in direct contact with studs or

joists at any point. Instead, strong steel clips are nailed to the framing. The lath is then fastened to the clips, which hold it approximately $\frac{1}{4}$ " away from the framing.

Consequently, any movement or warping of the framing is transmitted to the clips rather than to the lath and plaster. The clips absorb the strain, just like spring and shock absorbers in your automobile absorb bumps in the road. These systems prevent framing movement from causing cracks, and they also prevent streaking or joist cracks.

These systems have the further property of reducing noise. The springs greatly reduce the number of sound vibrations, set up in framing, which are telegraphed into adjoining rooms.

Rocklath and Metal Lath Resilient Systems are particularly recommended for ceilings in large rooms—for there is where cracks caused by movement of framing are most likely to show up. The Metal Lath Resilient System is also recommended for bathrooms as an aid to privacy, and either one for rooms where you want quiet, such as a study or for partitions or ceilings between a room where there may be considerable activity and an adjoining bedroom.

There is another system called the Rocklath Bridjoint System which uses spring clips to fasten end joints of lath between studs or joists. In this way, although the lath is fastened to the wall directly, the joints are not nailed, and it is at the joints, nailed directly to framing that cracks caused by movement are most likely to occur.

Because of its economy (Bridjoint System costs little or no more than Perforated Rocklath, nailed directly to the framing), we recommend the Rocklath Bridjoint System for walls and ceilings throughout small homes, and on walls, with Resilient System ceilings, for larger, more expensive houses.

Good Plaster and Good Plastering— The Final Touches

Practically all of the plaster which we use today is made of gypsum except for some types of finishing coats which are partly lime. The developments of gypsum plaster and the improvements which have been made in it have contributed greatly to better construction and lower building costs.

For example, plaster doesn't take nearly so long to set as it used to, which has decreased the time necessary to finish a house. It is possible to paint much sooner after the application of plaster, because of the development of gypsum gauging plaster which is mixed with the lime finishing coat to accelerate its setting and drying time.

More uniform setting time, greater plasticity, better working qualities and better keeping qualities are among the important contributions which manufacturers, under the leadership of the United States Gypsum Company, have given the building industry. They are important because they make possible better workmanship and encourage higher standards of plastering than were ever before possible.

For the best plastering over any base, specify "three coat work." By this method, the first or "scratch" coat thoroughly covers the lath and is then "scratched" with edge of trowel or rake, so that it provides a firm bond for the second, or "brown" coat. The first coat should be allowed to set and dry before applying the second coat, and this, in turn, should set and partially dry before the third, or finish, coat is applied.

"Cement" plaster is the type most commonly used throughout the country today. For walls and ceilings, extra strength and fire resistance, we suggest that you specify "wood fibre" plaster, a gypsum plaster which gains in hardness from the specially processed wood fibres mixed into it. In some markets, sanded cement plaster is available. This is plaster which has been pre-mixed with the proper amount and kind of sand at the factory.

Most sanding, however, is done on the job. It is less expensive and generally satisfactory, provided coarse, sharp sand is used. It is important to use coarse sand because it makes a stronger wall—fine sand presents many more surfaces to be cemented by the plaster and results in weak, soft walls. To assure the right kind of sand, we recommend the sand specifications established by the American Society of Testing Materials.

If your sand and plaster are job mixed you should take care to prevent oversanding. Although the number of yards you can get out of a ton of plaster varies directly with the amount of sand you can put into it, the strength goes down in a straight line ratio as you add sand. Oversanding is not only a bad practice, but the belief that it cuts costs is not true. Excess droppings, extra work which oversanding causes, make it more expensive than proper mixtures.

In a first (or scratch) coat of cement plaster there should be no more than two parts of sand, by weight, to one of plaster, and in the second or brown coat the proportion of sand should be not more than 3 to 1, by weight.

The Importance of a Properly "Gauged" Finish

You may have noticed walls that have fine, hair-like cracks or checks over their surface. Such blemishes are unnecessary and avoidable, for most of them are caused because insufficient gauging plaster was put into the lime mortar finish coat.

Gauging plaster is high purity gypsum plaster, made of specially selected and ground white rock. There are two kinds of gauging plaster, known in the trade as "white" and "local." The former is made from rock taken from special deposits noted for their whiteness and purity. The latter is made from the best rock found near the mill producing the ordinary plaster shipped into your community. For whitest walls and best finish it is recommended that you specify "white" gauging.

Gauging plaster should be mixed with lime in the ratio of 3 parts lime to 1 part gauging by weight, for smooth, white, easily decorated walls and ceiling.

After its initial set, lime hardens by drawing carbon dioxide out of the air to combine with the lime. This is a slow process. Excess water in the lime evaporates, and the lime then tends to shrink, which causes the hair-like cracks we spoke of. Gauging plaster eliminates the shrinkage; and because gypsum is a fast-setting material, the finish becomes harder much more quickly. This means speedier construction, and it permits earlier decoration without injury to paint.

Sometimes plasterers use less than the specified amount of gauging under the mistaken impression that they save money. This feeling comes from the fact that gauging plaster costs slightly more than lime. But the slight extra cost in material is more than made up in lower application costs.

The only way your plasterer can get a proper finish with an undergauged lime is to go over the wall with trowel time and again to force all the excess water out of the lime finish. Properly gauged lime requires much less "troweling" and is, therefore, less costly to apply.

Demand Proper Thickness

Properly applied over a good base, you cannot improve on a plaster finish. It is well to recognize, however, that like every other construction activity poor workmanship can spoil it. Most plasterers prefer to do good work, for they are craftsmen proud of their skill. Sometimes poor plastering can be traced to builders who deliberately cheapen their houses, frequently due to lack of knowledge of what good plastering means.

Of particular importance to good plastering is a proper thickness of plaster. You will not have strong, rigid walls without it, and you should make frequent measurements to make sure you are getting the thickness shown in your specifications.

Building codes have standardized on minimum thickness of plaster over various bases. We are listing them here, and every manufacturer of lath and plaster disclaims responsibility for jobs on which plaster is applied at a lesser thickness.

PROPER PLASTER THICKNESS OVER VARIOUS BASES

The word "grounds" refers to the total thickness of material plus the lath necessary to build the wall and ceiling out to proper thickness.

Material	Minimum Over-All Grounds (from sur- face of framing member to finished surface of plaster)	Minimum Plaster Thickness
Metal Lath	$\frac{3}{4}"$	$\frac{5}{8}"$
Gypsum Lath	$\frac{7}{8}"$	$\frac{1}{2}"$
Gypsum Lath Resilient System	$1\frac{1}{4}"$	$\frac{1}{2}"$
Insulating Lath— $\frac{1}{2}"$	$1"$	$\frac{1}{2}"$
Insulating Lath— $\frac{3}{4}"$	$1\frac{1}{4}"$	$\frac{1}{2}"$
Insulating Lath— $1"$	$1\frac{1}{2}"$	$\frac{1}{2}"$
Gypsum Tile	$\frac{1}{2}"$	$\frac{1}{2}"$
Wood Lath	$1\frac{3}{16}"$ *	$\frac{1}{2}"$

*Also carries a maximum Over-All Ground of $\frac{7}{8}"$

Plaster and Architecture

Plastering is one of the oldest crafts, and it is an art worthy of the most skillful workman.

As a fireproofing agency, we hear of plaster in the 8th

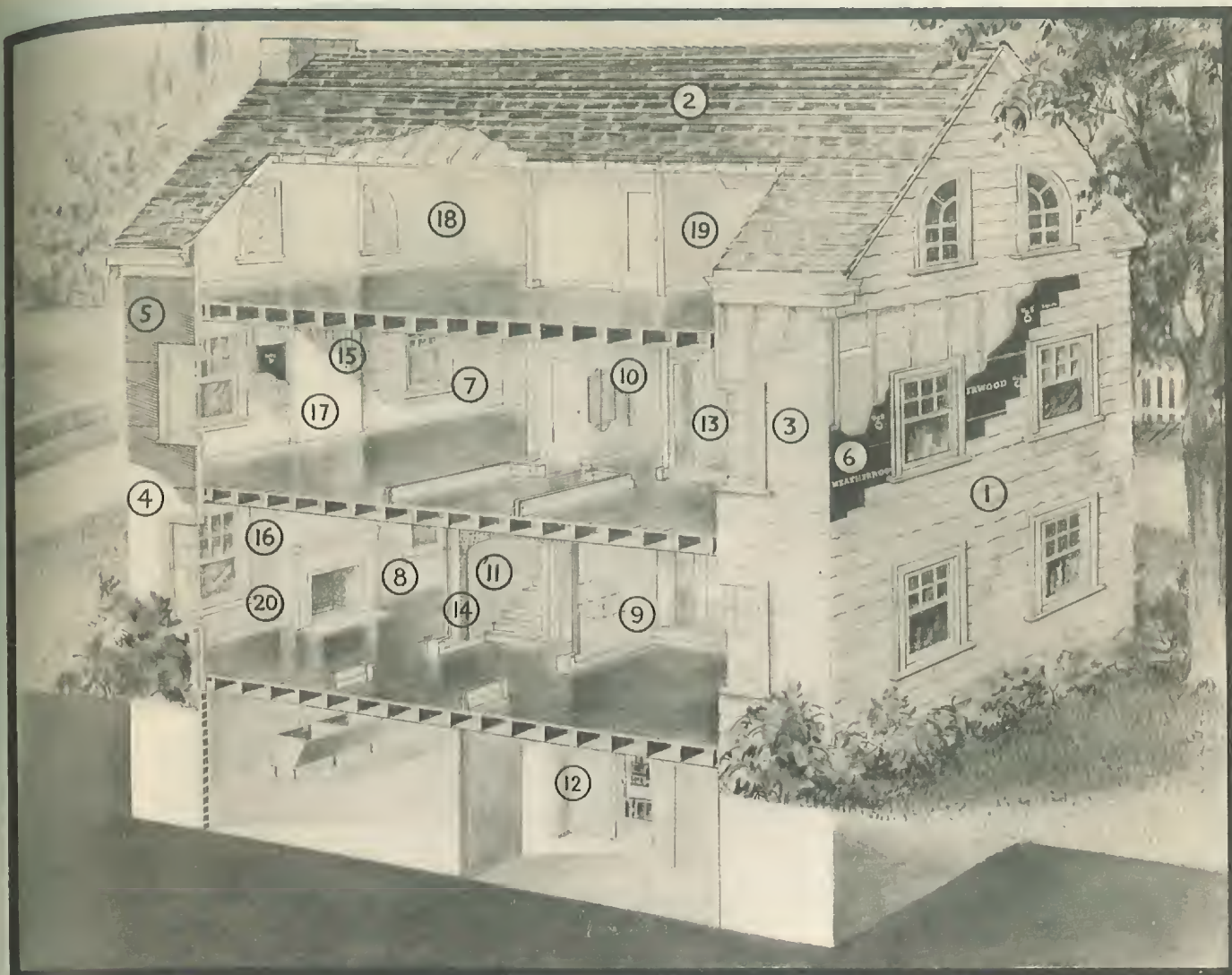
Century, when an English King, following a disastrous fire in the City of London, ordered all buildings used for baking, cooking or brewing to be plastered inside and out.

As an architectural embellishment, plaster's origins are lost in the mists of antiquity, and today it is still in the forefront of materials used for architectural decoration. Coves, cornices, niches, arches, mouldings run by a master craftsman add beauty and dignity to a room. Plaster is adaptable to any type of architecture, to any structural form.

We suggest you consult with your architect and plasterer on the decorative touches which modern, simple ornamental plastering can add to your home.

Our final suggestion is that you insist that the lath, plaster, lime and the paint to go over them are all furnished by *one* manufacturer so that one reliable firm is responsible for every product in the finished wall.

*Plaster manufacturers have now adopted for uniform recommendation the specifications for plaster recently issued by the *American Standards Association*. We suggest that your architect include them in your standard specifications. For a free copy write United States Gypsum Company, 300 West Adams St., Chicago, or the office nearest you.



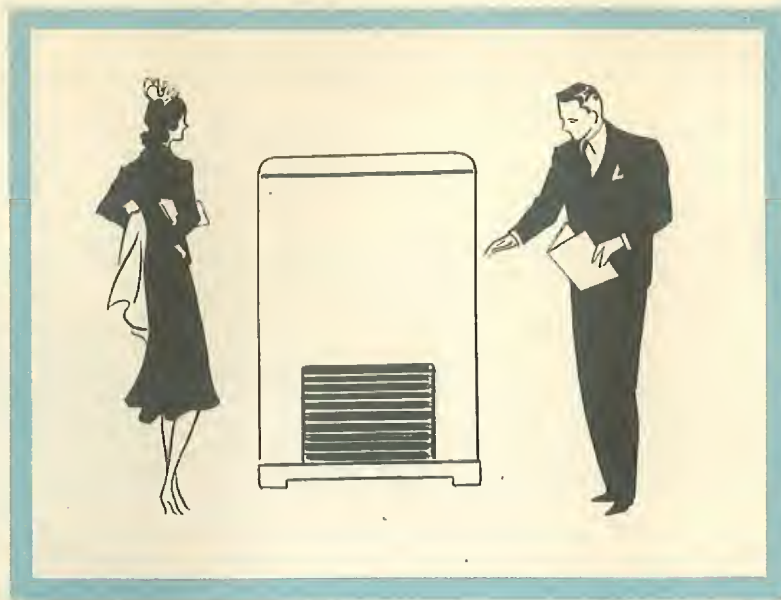
USG PRODUCTS FOR WALLS AND CEILINGS

FOR OUTSIDE WALLS AND ROOFS

1. USG Asbestos Siding
2. USG Asphalt Shingles and Roofing
3. Gyplap—The Fireproof Sheathing
4. Oriental Exterior Stucco
5. Red Top Stucco Lath
6. Weatherwood Asphalt Coated Sheathing

FOR INTERIOR WALLS AND PARTITIONS

7. Rocklath—Plain and Perforated
8. Weatherwood Insulating Lath
9. Rocklath Resilient System
10. Metal Lath Resilient System
11. Rocklath Bridjoint System
12. Pyrobar Partition Tile
13. Red Top Keene's Cement
14. Red Top Metal Arches
15. Red Top Metal Lath
16. Red Top Plasters
17. USG Lime
18. Sheetrock, Fireproof Wallboard
19. Weatherwood Blendtex and other Weatherwood Products
20. USG Paint Products



THE HEATING AND PLUMBING SYSTEM

YOU SHOULD EXPECT these things from the heating system of your new home:

It should heat all rooms and maintain a comfortable, uniform temperature on the coldest days of winter and the mildest days in fall and spring.

It should distribute heat near the floor, where it is felt, and not up at the ceiling.

It should warm the home without creating drafts.

It should be easy and convenient to operate.

It should be clean in its operation.

It should be durable, with low maintenance cost.

It should be economical to operate.

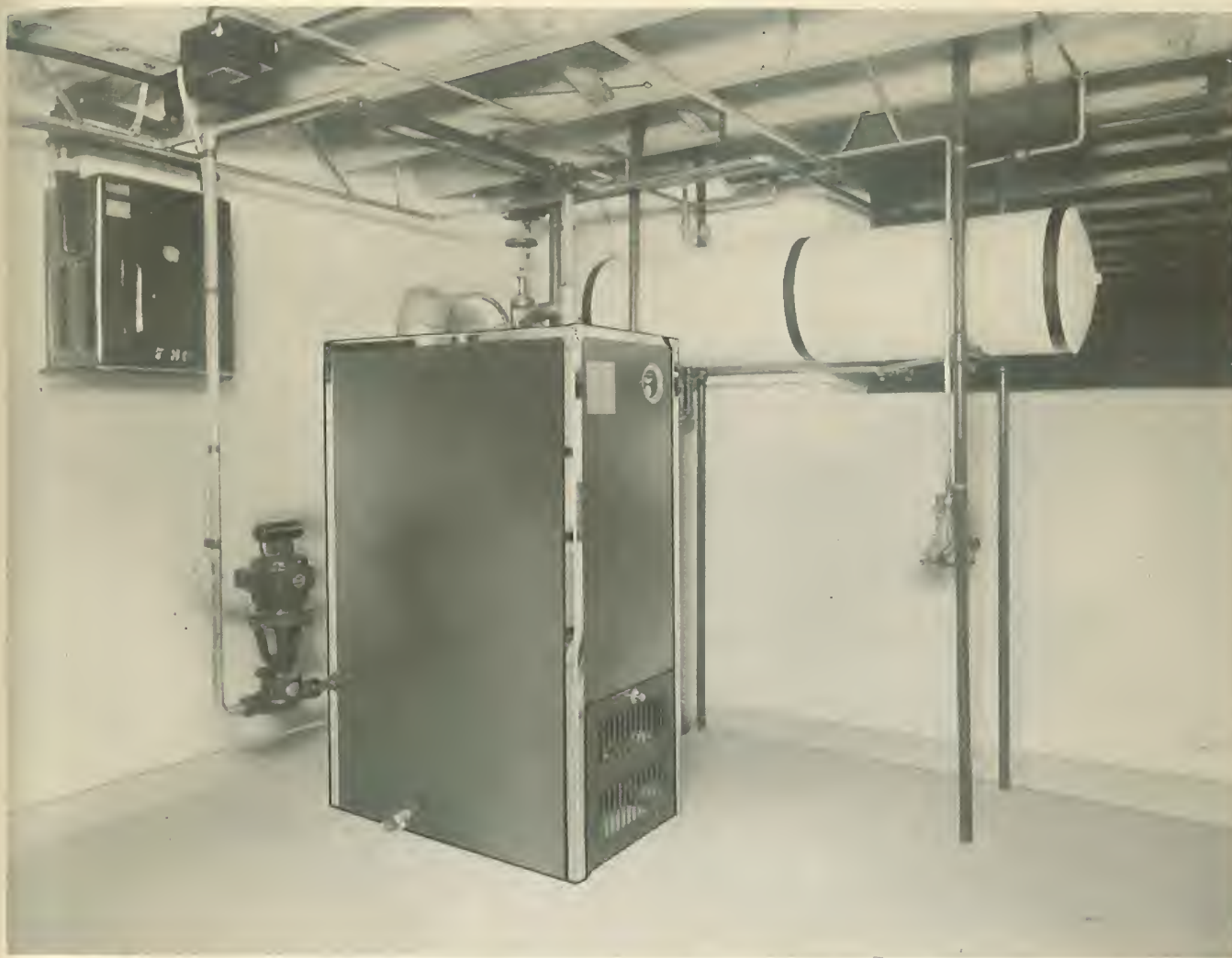
There are three methods of residential central heating in general use today: hot water, steam and air, each of which has been greatly improved in recent years.

Automatic operation of the heating plant can be obtained for each of these methods with any fuel, including coal.

The operation of all three types of heating plants is more efficient and more economical by the application of "forced circulation." In the case of hot water and hot air heating plants, the forcing is done by electric motors. In the case of steam heating plants, equally positive operation can be obtained by the use of newly introduced vacuum valves.

Mechanical circulation makes heating more efficient because it holds a uniform temperature in the coldest weather or on mild days. It is less costly in operation and it effects economies in the heating plant itself, because it permits smaller pipes and radiators.

Whereas a gravity-type hot water plant might require main lines with a diameter of 3", a plant operating with forced circulation would require pipe only 1" or 1½" in diameter.



This plant provides economical heating for the small house. It is a highly efficient hot water heating plant with mechanically forced circulation of the water. The boiler is automatically fired by a stoker, a revolving feed worm under the basement floor conveying slack sized coal automatically from bin to boiler.

Automatic Firing with Coal

It is a fallacy to associate the idea of automatic heat only with oil or gas. Amazing improvements have been made in recent years in stokers and magazine feed boilers adapted for residential use.

Newest home-heating stokers are completely automatic in operation, even to the point of conveying coal automatically from bin to fire, and controlling the volume of air supplied to the fire. This air control is largely responsible for the 25% greater combustion efficiency of stoker over hand firing.

Stokers can be installed in almost any type of boiler or furnace and recently manufacturers of boilers have designed equipment especially adapted to stoker firing.

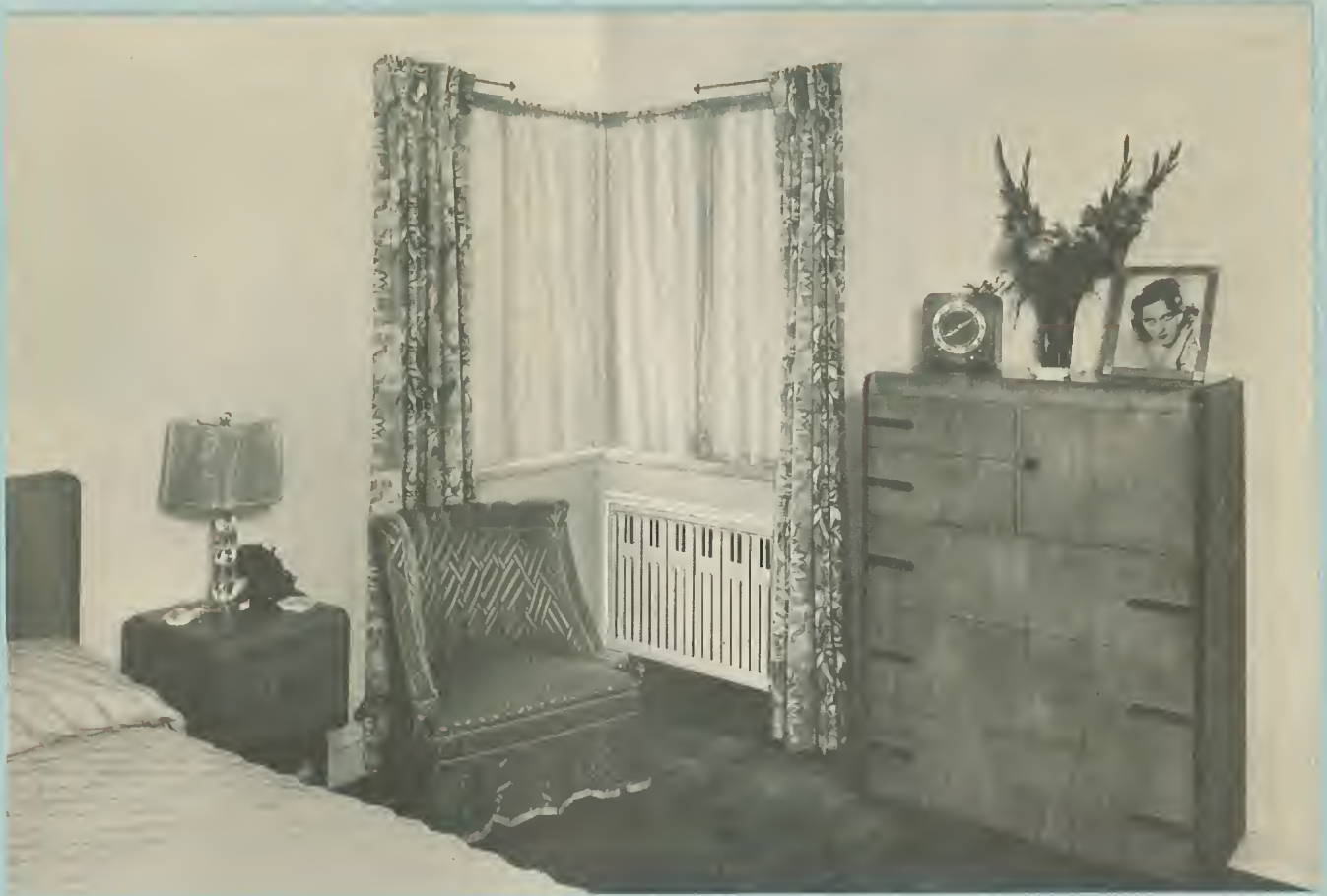
What About Air Conditioning?

Air conditioning simply means making the house more

livable, in so far as temperature, humidity, movement and quality of air are concerned.

Although people often associate the term "air conditioning" with cooling, heating is easily 90% of the operation. In the case of a warm air furnace, the heating and winter conditioning functions are centered in one unit. In the case of steam and hot water heating plants, air circulation and humidity controls are separated from the heating units so that they may operate when no heating is required, or vice versa. A high degree of flexibility and rigid control of all functions may be obtained with this "split" system.

The heating plant cannot be used for summer cooling without special equipment. The mere circulation of basement air through the upper rooms by means of the furnace fan does not give effective cooling. Research shows that a temperature change of only one degree



Utmost freedom in the arrangement of furniture is permitted by new recessed types of radiators which fit neatly into the wall. Placing radiators under windows is a protection against cold drafts.

can be effected by circulation of basement air. In a short time the basement air becomes warmed and further cooling is impossible.

For effective cooling, some cooling agent such as ice or well water must be used. Wherever well water at a temperature of 58 degrees or less can be obtained, it is by far the most economical cooling agent. However, artificial cooling is not practical for most houses and for summer comfort it is better to depend on insulation to cut down the "heat build-up" and an attic fan to pull the hot air out at night and draw in the cool air.

Correct Installation Important

An undersized heating plant—a plant that must be "forced" in severe weather—is undesirable because it will do an inadequate job and because it will wear out in a short time.

Rather than take a chance on undersizing the heating plant it is good business to provide for extra capacity because frequently home owners, after a house is built, decide to heat a sun porch, a garage, or an attic.

For the efficient and economical operation of heating and air conditioning equipment, correct installation is highly essential. Indeed, with the growing complexity of the mechanical equipment in the house, the home owner should see that such work is done under the direction of a thoroughly experienced and competent contractor.

The Plumbing System

As much of the plumbing in your home is hidden and expensive to repair in case of trouble, therefore it is important to carefully watch its quality and installation. This is doubly important when you consider how directly the plumbing affects the health and comfort of the family.

The plumbing system of a house is divided into three parts: the water supply piping, the fixtures, and the waste piping.

The function of the water supply piping is to provide an adequate flow of water at every fixture at all times and under all conditions. The capacity of the piping system

should be sufficient to permit the simultaneous use of all fixtures which experience indicates are likely to be used at the same time.

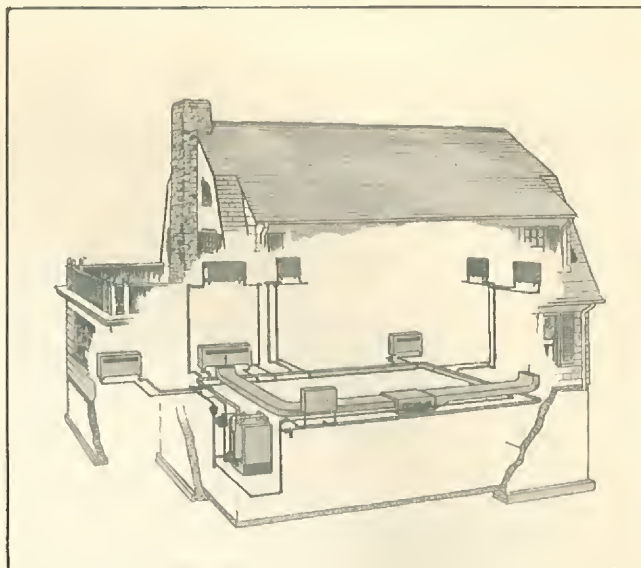
An inadequate supply of water at the faucets is not merely an annoyance—it may be a definite menace to health. Under certain conditions, negative pressure in the supply lines may permit siphonage of polluted water through a cross-connection, an improperly designed fixture or unprotected submerged inlet, causing pollution of the pure water with sewage.

The size of the service line from the street main to the meter is of primary importance in determining the water supply available for the plumbing fixtures of a house.

Often the fact that a household is inconvenienced by faucets which deliver only a dribble of water instead of a steady flow of $2\frac{1}{2}$ gallons per minute, is due to a small service line. The service line from the street should be at least $\frac{3}{4}$ " in diameter.

Other factors within the house which affect the rate of flow to plumbing fixtures are: the diameter of the supply lines to the individual fixtures; the design of the piping system, that is, if it is relatively straight or if it is impeded by bends; number, character, and diameter of valves; and the presence of scale, solder,

Notice that the fire travel in this modern heating plant is three times as long as the boiler. This permits the extraction of maximum heat units from the fuel—adds efficiency and economy to the heating system.



A flexible automatic heating and conditioning system for the medium sized home. The conditioner provides gentle movement of clean humidified air through the living quarters. Air from the kitchen and bathrooms is not recirculated.

or pipe shavings on the inside pipes.

Pipe supply branch lines to individual plumbing fixtures should be not less than one-half inch in diameter.

Improper sizing of the piping may cause "starving" of the water supply for certain fixtures. Thus if one person is taking a shower while another person opens a sink faucet, the sudden drop in the pressure of the cold water may result in the scalding of the bather.

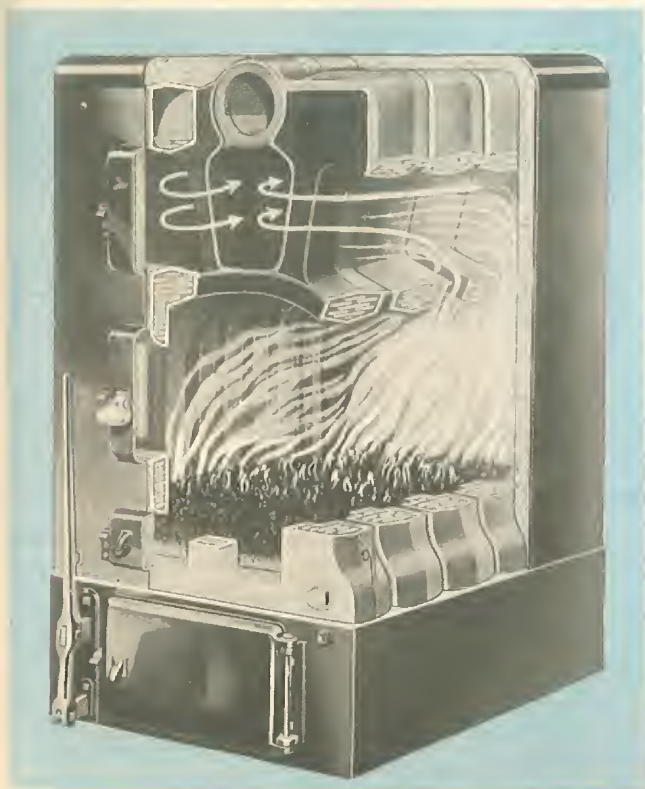
The experienced plumbing contractor will design the supply piping so as to avoid unnecessary changes in the direction of the piping. Every elbow introduces friction losses into the line which reduce the flow of water.

Better grades of pipes are carefully treated to remove scale before leaving the mills. At the same time your plumber should take care to ream pipes so that shavings are not left inside.

Importance of Valves and Fittings

Valves and fittings are a most important part of the plumbing system of the house. In the case of an average two-story house, about 300 feet of piping and fittings are concealed in the walls and under the floors. Obviously, this part of the plumbing system can be repaired or replaced only at great expense. Therefore, this hidden piping with its fittings and valves should be of the highest quality.

Fortunately for the builder of a home, either in the low-cost or higher brackets, the difference in cost for valves and fittings of the best quality is negligible when compared with the total cost of the plumbing system.





SELECTING INTERIOR FINISH

THE AVERAGE HOME OWNER comes to the question of interior finish with a multitude of ideas, gained from years of home inspection. A clever breakfast room treatment here or a fireplace decoration there has caught his fancy; or a novel window arrangement from a movie setting may have impressed him, and he decides that when he builds, "his home" will be like that.

All such ideas may be perfectly sound in the homes in which they are originally used. They probably were chosen for functional or architectural reasons and for their relation to other features of the house. However,

if transplanted "root and soil" without consideration of their fitness to *your* house they may not have such happy results.

Therefore, before you decide upon doors and windows, and their treatment, and the selection and finishing of your floors, walls, ceilings and trim, there are four factors against which you should check your accumulated ideas. They are:

- The type of your house.
- The style of your furniture.
- The use of your rooms.
- The size and shape of your rooms.

Type of House

The style of architecture of your home should set the pace for its interior treatment. For example, in an English house the walls may be rough and darker. Large floral patterned paper is suitable for the bedrooms, while the windows will probably be of the casement type. On the other hand, in the average American or Colonial home there is a tendency towards less texture, and wallpaper runs toward the small all-over calico patterns. Windows are of the double-hung type.

The Style of Furnishings

Your furniture, its "weight" and coverings should have considerable influence upon your wall, ceiling and floor decoration. For example, if your furniture coverings are colorful, it will be well to plan your walls and floors as a quieter background for these pieces, using soft, blending shades that have high light reflection. The flooring in this case should be plain and tend toward the medium or lighter shades.

The Use of Rooms

While it is a good rule to select a color scheme for the whole house, each room is a separate decorating problem. For example, while we may decorate the downstairs lavatory or "powder room" in bold and striking designs, the decoration of the main baths should be in somewhat softer shades. And the dining room, even in an otherwise most informal house, should have a formal feeling.

The exposure of rooms also influences the way in which they are finished. For example, for north and east rooms which do not get as much sunlight, or get the cooler indirect lights, use warm colors such as yellow and peach. In the south and west rooms, however, the cooler and more neutral colors such as warm gray, gray green and light blue, are desirable.

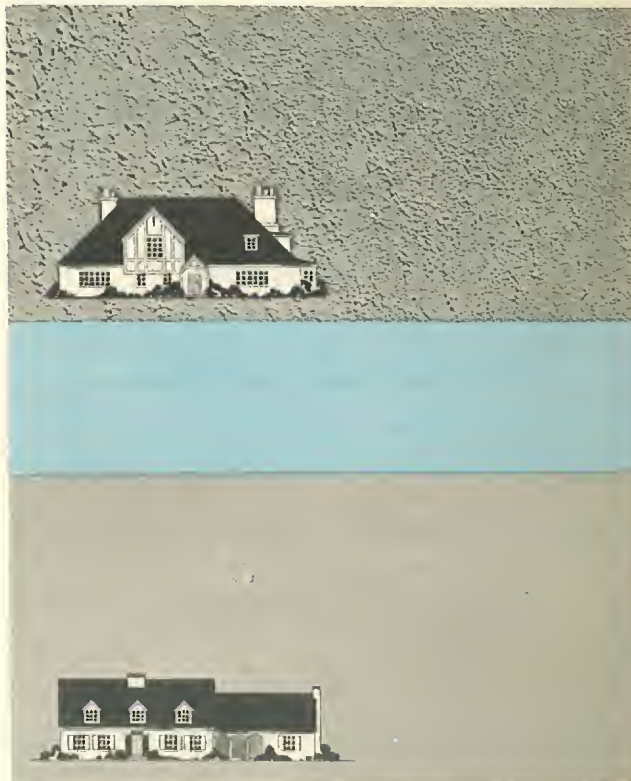
The Size and Shape of Rooms

The size and shape of a room influence the way in which you finish it because one color or architectural treatment can make it look larger while another will apparently reduce its size. Or a treatment which is quite in keeping in one room may be out of proportion and key in another.

Thus, generally speaking, in a small room use a small pattern. In a narrow room with high ceilings to give the impression of less height and greater width, you may run a moulding 12" to 18" below the ceiling line and if wallpaper is your choice for decoration use horizontal effects. Conversely, for rooms with a low ceiling use vertically striped effects.



In an English type house the walls may be rough and darker. Large floral paper is suitable for the bedrooms.



In the average American or Colonial home there is a tendency toward less texture, and wallpaper runs toward the small all-over calico patterns.





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Selecting Doors and Windows

Today's home builders are fortunate in that the doors and windows which previously were, by necessity, custom built items are now, in most cases, factory fabricated stock items. Needless to say, this greatly reduces their cost.

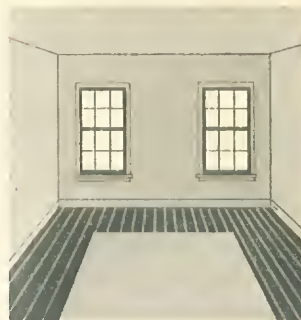
In the selection of doors and windows be sure that you get kiln-dried wood, and have it primed with a coat of paint immediately before or after delivery on the job. Building material dealers take great care that their stock does not warp and the same consideration should be given on the job. If an exterior door is veneered, the glue used should be weatherproof.

There are two general types of windows—the double-hung, vertically sliding, counterweighted sash; or the hinged, horizontally swung casement sash. The architectural style of your house will determine which you should use.

The double-hung window is about as troubleproof as you can find. Recently developed windows of this type have largely eliminated sticking and binding. The double-hung window is easy to drape, shade and screen. Its main objection is that only 50% of the area is available for ventilation. The casement window is favored for ventilation advantages and for its ease of cleaning.

The better grade windows of both types come equipped

with weatherstripping and with provision for full length storm sash and screen. Weatherstripping is a boon in many ways. It reduces drafts, saves fuel, and makes the maid's or housewife's work easier because it helps keep out dust and dirt. It thus helps preserve furniture and upholstery and makes redecorating less frequently necessary. With casement windows the roller screen is preferred—the handle for operating the windows being manipulated through the screen.



Wall to wall carpeting makes the room appear wider.

Selecting the Trim

Today, in the majority of cases, one can also secure well designed stock items of mantels, stairways, mouldings, cupboards, etc. These save costs and have, besides, the many advantages of precision manufacture. In line and design they compare favorably with the finest handiwork of the past.

Like doors and windows, the trim should be kiln-dried lumber, and before it is applied it should be prime-coated and back-painted so that danger of warping will be minimized.

Selecting the Floors

Unless your home will be completely carpeted, hardwood floors are to be desired, especially since today factory finished strip flooring is available. This eliminates much of the cost and bother of scraping on the job.

There is a wide range of hardwoods for finish flooring. Oak or maple are admirable, fine in appearance, and have long life. In at least one room you may want to get away from the more or less standard finish floor pattern. An interesting variation is offered by parquetry flooring. Parquetry blocks are factory-finished, and when they are laid in place little additional work is necessary.

Linoleum floors are becoming more and more popular and their use is no longer limited to bathrooms and kitchens. Linoleum, for example, is ideal for children's rooms and recreation rooms. Special decorative effects may be achieved with it, and it is easy to keep clean,



Above: The double-hung window is about as troubleproof as you can find. Recently developed windows of this type have largely eliminated sticking and binding. This type generally used with American or Colonial homes.

resists wear, and provides an economical flooring. Cork and rubber tiling are also available in a wide variety of color and design.

If you are planning a basement recreation room, asphalt tiling is recommended. Few other surfacings will stick so well to a cement floor.

Selecting the Wall Finish

If you decide to paint, you may wish to use an oil paint or enamel for the kitchen and bathroom walls. This is desirable because such a surface can be frequently scrubbed and offers resistance to the high humidity frequently created in these rooms. Oil paint or enamel is also preferred for children's rooms, baseboards and woodwork that must be frequently washed.

For the balance of the house, you will be pleased with the beautiful color effects which can be achieved with casein (water thinned) paints, such as USG's "Texolite." These paints, in addition to their beautiful colors, have unusually high light reflectivity, making your rooms light and cheerful. They do not lose their shade, or yellow with age, and they are extremely economical. They do not "soak" into the surface, and thus a gallon of a paint such as Texolite covers a large surface. Furthermore, their binding qualities mean that a single coat generally does the job.

There is a growing tendency towards a soft, interesting texture in walls—a compromise between a plain expanse and the rough bold texture of a few years ago. Interest-



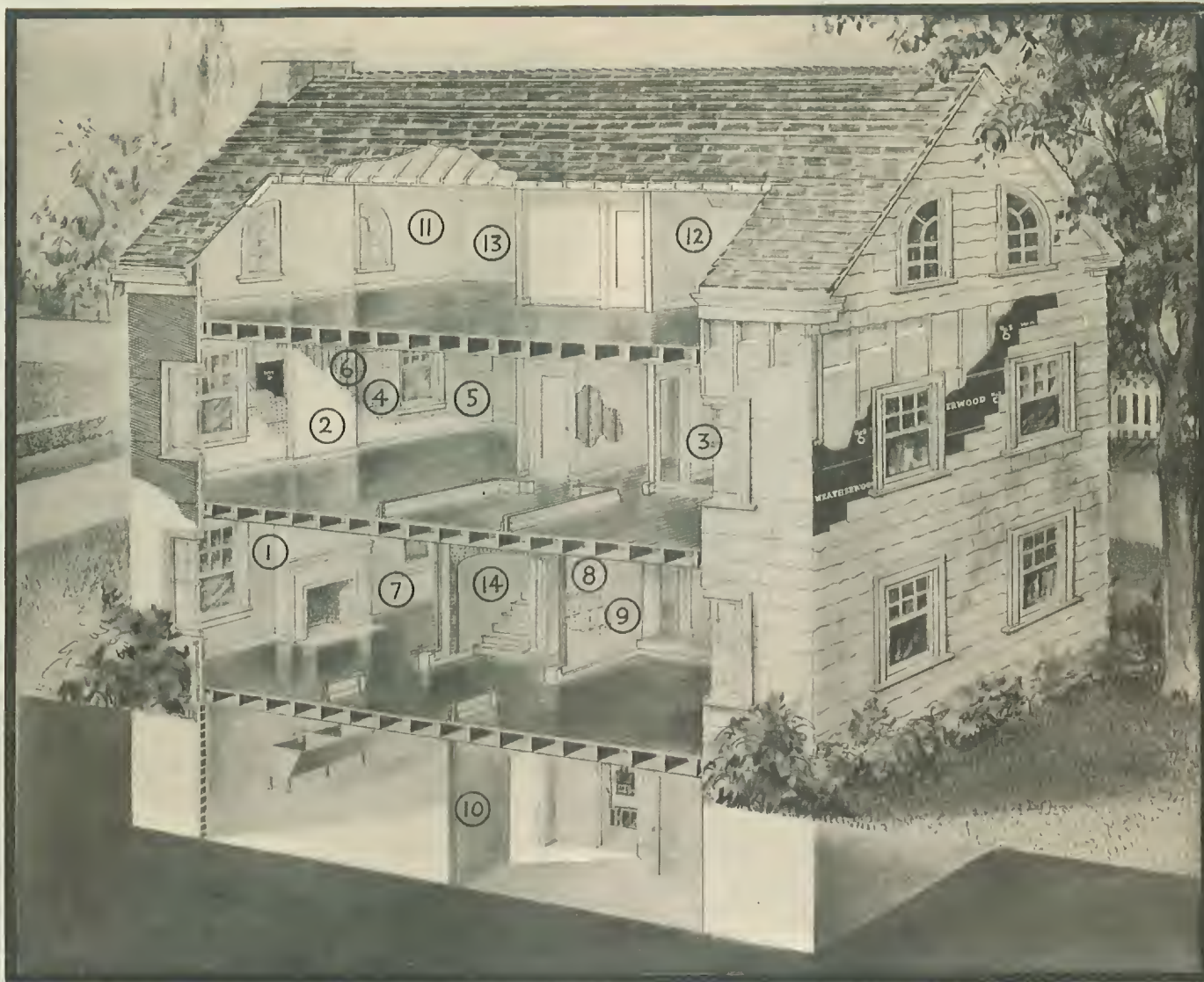
The casement type window is favored for ventilation advantages and for its ease of cleaning. With casement windows the roller screen is preferred—the handle for operating the window being manipulated through the screen.

ing designs and treatments are possible in textured surfaces with casein paint products made especially for this purpose, such as USG "Textone."

If you are thinking of wallpaper, there is much to be said for the idea of deferring it for a year or so, perhaps experimenting meanwhile with some of the newer color schemes made possible by a paint like Texolite. Such effects can be achieved overnight and at a minimum of cost. Owners of new homes also often like to experiment with furniture groupings and coverings, and under this plan they can do so at minimum expense before making their choice of paper.

There are on the market excellent types of interior finishes which in one product build, insulate, decorate and quiet sound. It will pay you to investigate these, especially for use in your recreation rooms and third floor spaces. Or you may wish to use Sheetrock, a gypsum wallboard which is fireproof, in these rooms. This can be obtained in a plain finish that effectively hides all joints, ready for final decoration, or you can get it in a wood grained surface.

Finally, there is wood paneling. While in the average house it is not often possible to use this throughout, certain combinations of wood paneling and paper, or wood paneling and paint are possible in selected rooms. Such combinations are, however, usually most successful under the supervision of an interior decorator. When using wood paneling, it should be backed with Perforated Rocklath and Plaster, or Sheetrock for fireproofing.



USG PRODUCTS FOR INTERIOR WALLS AND PARTITIONS

PLASTERS

1. Red Top Plasters
2. USG Lime
3. Red Top Keene's Cement

LATHING MATERIALS

4. Perforated or Plain Rocklath
5. Insulating Rocklath
6. Red Top Metal Lath
7. Weatherwood Insulating Lath
8. Rocklath or Metal Lath Resilient System
9. Rocklath Bridjoint System

WALLBOARDS

10. Sheetrock
11. Insulating Sheetrock
Wood Grained Sheetrock
Sheetrock Tile Board
12. Weatherwood Blendtex
13. Weatherwood Building Board; Hardboards
Duplex Board

PAINTS

14. USG offers a full line of casein paints—including Texolite for color—Textone for texture. Also, Calci-mine, K-Cemo lime-locking primer and Cementico for cement surfaces.



Residence of Mr. and Mrs. H. F. Parsons, San Marino, California. Palmer Sabin, Architect, Los Angeles, California.

... HOW USG BUILDING
MATERIALS HELP PROVIDE
SECURITY, COMFORT AND
ECONOMY FOR YOUR HOME



Wise budgeting, careful planning, good construction, all contribute to the security, comfort and economy of your home.

But without good materials they are like a fine motor without fuel—or, which is even worse, like an engine with an inferior fuel that spoils it. Materials turn your plans into reality, and whether it is a large home or a small home, it cannot be a fine home without fine materials.

You pay no more if you select products that bear the trademark of a reliable manufacturer, well known to you, your architect, contractor and dealer. Also, it is wise to purchase as many materials as possible under one maker's trademark, for in this way you center responsibility, which is added protection for your investment.

The United States Gypsum Company is an organization whose entire resources are devoted to the manufacture of quality materials for the building industry. These products include metal lath, gypsum lath, insulating lath, gypsum partition tile, base coat plasters, finishing plasters and lime, insulation board, insulating wool, paints, asphalt shingles, asbestos shingles and siding and gypsum wallboards. The U S G line is so diverse and so complete that the company is able to give unbiased advice on the choice of many different types of materials.

For example, U S G makes *both* metal lath and gypsum lath. Thus, it is in a position to help you and your architect decide where each can best be used in your home to give the results you want at the price you can afford.



Home in Belmont, Massachusetts, designed by Derby, Barnes and Champney, Architects, Boston, Massachusetts.

On the following pages we present in outline form the salient points of each U S G product used in home building or remodeling. There are undoubtedly some on which you will want more detailed information.

For further information on any of the United States Gypsum Company's products, ask your local U S G dealer or write the U S G Sales Office nearest you. For your convenience we are listing the United States Gypsum Company's offices on this page.

General Office: United States Gypsum Company, 300 West Adams Street, Chicago, Illinois.

U S G SALES OFFICES

Albany, New York, 1106 Nat'l Savings Bank Building
Atlanta, Georgia, 1440-45 Citizens & Southern Bank Building
Baltimore, Maryland, 1400 Standard Oil Building
Birmingham, Alabama, 1203 Comer Building
Boston, Massachusetts, 505 Statler Office Building
Buffalo, New York, 1116 Rand Building
Charlotte, North Carolina, 1012 First Nat'l Bank Building
Chicago, Illinois, 300 West Adams Street
Cincinnati, Ohio, 3012 Carew Tower
Cleveland, Ohio, 627-29 Hanna Building
Dallas, Texas, 1301 Santa Fe Building
Denver, Colorado, 836 Continental Oil Building
Detroit, Michigan, 10090 W. Jefferson
Houston, Texas, 706 Sterling Building
Indianapolis, Indiana, 1015 Architects & Builders Building
Kansas City, Missouri, 438 Ward Parkway
Los Angeles, California, 807 Architects Building
Milwaukee, Wisconsin, 439 West Oregon Street
Minneapolis, Minnesota, 1308 Foshay Tower
New York City, 30 Rockefeller Plaza
Omaha, Nebraska, 312 Woodmen of the World Building
Philadelphia, Pennsylvania, 1616 Walnut Street
Pittsburgh, Pennsylvania, 712 Grant Building
Portland, Oregon, 302 Spalding Building
St. Louis, Missouri, 1047 Big Bend Boulevard
Salt Lake City, Utah, Dooly Building
San Francisco, California, 2501 Harrison Street
Washington, D. C., 15th and K Streets, Investment Building



Residence of Mr. Willard Bellack, Neenah, Wisconsin. George Fred Keck, Architect, Chicago.



U S G PRODUCTS FOR EXTERIOR WALLS

As you read through the product section of this book, you will find that the U S G line offers you a varied list of products from which you can select the material or group of materials that will best fulfill your individual cost, space and structural requirements.

For instance, one type of sheathing insulates while adding structural strength to an airtight, windproof outside wall. Another sheathing adds the safety of fireproof gypsum and at the same time protects

against wind infiltration and helps brace the wall.

If your home's architecture requires its use, you will find in the U S G line a superior grade of stucco that should be applied over the strong, durable base known as U S G Stucco Mesh.

For the house suited particularly to any of the shingle or clapboard sidings, asbestos cement sidings offer neatness, fireproofness and permanently waterproof finishes in many different colors.

WEATHERWOOD

Asphalt Coated Sheathing

Under the exterior surface of wood siding, brick veneer, asbestos or wood shingles and stucco, the sheathing of your home is a vital part of the construction. Today, research has provided materials which give more than bracing strength and rigidity to the frame of your home. You can use sheathing which adds to your comfort and saves fuel because of its insulating qualities. Weatherwood Insulating Sheathing is a material which gives this plus value.

Three-Fold Service

Weatherwood Asphalt Coated Sheathing performs a triple service—1. It builds. Applied over the frame of the building each 2 x 8 foot section ties 7 studs together



An economical material to apply. Cutouts are made on the scaffold. Saves time and reduces waste.



This sheathing adds bracing to the house—it ties seven studs together with one sheet.



Weatherwood Sheathing is a 3-in-1 product. It builds, sheathes and insulates. Tongue and groove joints protect against wind infiltration and make a tight wall.

—provides additional bracing for the framework. 2. It keeps out wind and dust. Its tongue and groove construction means a wind-tight wall. 3. It insulates. Weatherwood Sheathing is an efficient, economical insulation. This means that you have greater comfort all the year—reduce fuel bills in winter.

How Weatherwood Sheathing Is Made

Hardwood fibers are ground and made into board form. These fibers are a series of tiny tubes which are interwoven in manufacture. The result is the formation of millions of dead air spaces which give the sheathing its insulating properties. The tongue and groove construction makes each joint weather and wind tight.

Weatherwood Sheathing is made in 2 ft. x 8 ft. sections. It may be handled quickly and easily by one man. It may be applied from the inside which saves the cost of outside scaffolding.

How It Is Protected

Weatherwood Sheathing is coated with asphalt on the outside to seal it from water and weather during construction. The inside fibers are treated with a size coat which protects the board from moisture penetration.

Consider These Points

When you select Weatherwood Sheathing you get added insulation, which means greater comfort winter and summer, fuel savings which continue year after year, a wind-tight wall, as well as quick, easy application.

GYPLAP

The Fireproof Sheathing

Sheathing has two main jobs to perform. It is a bracing material for your house—to help give rigidity to your walls—and it should be a protective barrier between you and the weather.

Modern sheathings give plus value, in addition to meeting these basic requirements. There is one type for example which adds insulation, another which, because it is made of a fireproof material, adds protection against fire to its other qualities.

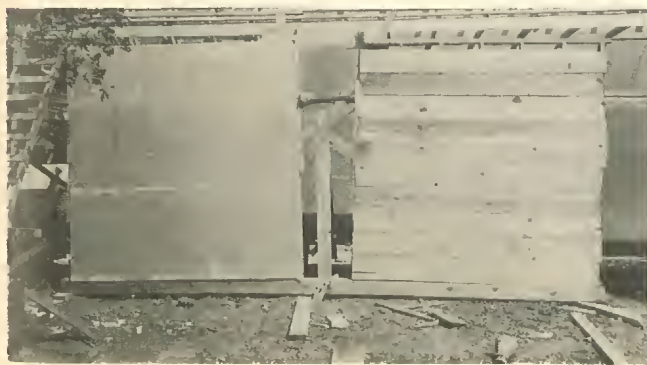
If you wish to combine insulation with a structural material, Weatherwood Insulating Sheathing (described on the previous page) should be selected. If you desire additional fire protection for your outside walls, Gyplap Sheathing is a logical choice.

Gyplap Keeps Out Weather

Gyplap is made in a standard half-inch thickness, two feet wide and six feet, eight inches or eight feet long, with tongue and groove edges on the long dimension. It is nailed horizontally over the outside of the studding of exterior walls.

Gyplap has exceptional efficiency in keeping out weather. First it has the advantage of large size; this reduces joints to a minimum and this helps build a tighter wall. Second, it has the tongue and groove to provide a tight fit at cross joints. Third, it is machine made for accuracy of dimension, and fourth, it is made with a mineral core and is, therefore, non-warping.

Because Gyplap is non-warping and non-shrinking it stays put. It does not open up at joints with moisture and temperature changes, and it makes possible a tight fit around window and door frames.



This test, made before a group of building inspectors, illustrates the superior resistance of Gyplap to the stresses which cause distortion or deflection. To its bracing strength and protection against weather, Gyplap adds fire protection, for Gyplap made of gypsum, is fireproof.

Gyplap Has Bracing Strength

Standard tests on Gyplap show conclusively that ordinary frame construction sheathed with Gyplap is much stronger than frames sheathed in the customary manner with either horizontal or diagonal wood sheathing. Similar tests made by Columbia University confirm these results. To the home builder this means a building built to last.

Gyplap Protects From Fire

"The Fireproof Sheathing"—that is what Gyplap is called. Applied over the framework you have a continual bulwark against fire. When you add to the interior Rocklath—the Fireproof Lath coupled with a coating of fireproof gypsum plaster, you have your framework completely encased in fire-fighting materials. You may even carry this protection farther by using Oriental Stucco or Asbestos Cement shingles on the surface. Even greater protection is afforded by a roof of Asbestos Cement or Asphalt Shingles.



Fire protection—Gyplap is fireproof.



Weather protection—Gyplap has tongue and grooved joints for tight walls.



Structural strength—Gyplap braces the building.

Oriental Exterior Stucco and Red Top Stucco Lath

Certain types of architecture call for stucco exterior. In order to have a good looking, durable job you require a superior grade of stucco properly applied over the right type of backing.

The combination of high quality stucco and stucco backing is supplied in *Red Top Stucco Lath* and *Oriental Exterior Stucco*.

Red Top Stucco Lath is a scientifically correct stucco base and reinforcement. It provides a continuous straight line reinforcing for stucco applied either by hand or machine.

It is designed to overcome shrinkage, temperature changes and wind stresses, and also protects the stucco against unusual shock and impact. It is "self-furring," which means economy in application.

Oriental Exterior Stucco

Oriental Stucco is prepared and mixed before it reaches the job. It needs only the addition of water to make it ready for the plasterer. It thus eliminates all the uncertainties of job mixing.



Oriental Exterior Stucco and Red Top Stucco Lath combine to give beautiful, durable, exterior beauty to these two homes designed by George Fred Keck, Architect, Chicago. Illustrating the adaptability of these materials to all price ranges, the home above is a moderate cost residence, while the one below is valued at approximately \$150,000.



Red Top Stucco Lath is a scientifically correct stucco base for reinforcement—economical because it provides self-furring. It grips and holds stucco with rigid steel fingers.

Oriental Stucco construction consists of two coats of Oriental Base Coat, followed by a single coat in color of Oriental Stucco Finish. The base coat is factory mixed and compounded to provide a strong and lasting background for the finish coat. As the correct proportion of uniformly graded sand is also included at the factory, any possibility of over-sanding is eliminated.

The finish coat is mixed with mineral colors and ingredients to make it water resistive and non-staining. It comes in white and eleven standard colors, largely the lighter tones which are the most difficult to produce in job mixed materials. All ingredients, including colors, are machine mixed and weighed to assure uniform color and correct mixture.

The successful use of Oriental Stucco is not confined to any particular section. Properly applied, it is giving satisfactory service on outstanding jobs in localities where severe temperature changes are common and in districts having alternately dry and rainy seasons.

Any desired period texture may be produced in the colors of Oriental Stucco, as well as smooth trowel, stipple, sponge, rough coat or splatter dash finishes. Its finish increases in strength and water-resisting qualities with age.



USG Asbestos Cement Siding No. 600 Wavy Butt is on this attractive home built by Alexander & Hale at Terrell Hills, San Antonio, Texas.

USG ASBESTOS CEMENT SIDING

Over a long period of time, Asbestos Cement Siding has established its usefulness as an attractive, economical solution to the problem of providing sidewalls of fire-proof materials in new construction or restoring old, dingy buildings to new life and beauty.

It remained for USG to revise the old standards and to offer a complete line of asbestos sidings covering a wide range of uses and price requirements. This complete assortment includes a general line of water-repellent sidings in two shades and three shapes.

It introduces a wonderful new process known as "GLATEX" which provides a product which is self-cleaning and may be washed with soap and water to restore its original freshness.

The General Line of USG Asbestos Cement Sidings

These Sidings may be had in Wavy Butt, Thatch Butt

and Clapboard designs (See illustrations). They are available in the whitest white or weathered grey. They are textured in wood grain which gives the appearance of wide wood siding so suitable to Colonial and other popular styles of architecture.

These sidings in the general line are all treated with a water-repellent compound. They are fireproof, weather-tight and do not require paint. They are low in cost and economical in application. Applied over present sidings, they stop wind infiltration and save fuel.

Glatex Processed Sidings— A Sensational Development by USG

Recently USG introduced a new process which has changed the whole complexion of sidewalls for houses.

This is called the "Glatex" process. The walls covered with this new processed siding stay as clean as a china



"Glatex" Siding—the exclusive USG self-cleaning siding. Even Iodine Washes Off Without Staining.

dish. The dense china-like surface resists water like a porcelain bathtub, is self-cleaning like a china cup, and may be washed with soap and water. This means factory-freshness that keeps the sidewalls of houses clean longer, and enables them to be readily restored to their original beauty.

This development was more than three years in the making, tests were made in grime-laden atmosphere. Soot, dirty transmission oil, and even iodine may be applied to the surface and wiped off with a clean rag. The surface is baked and fused into the core of the siding. This is a development you should see at your nearest USG dealer.

The Glatex Line is available in the Wavy Butt design only. It is made in whitest white, weathered grey and an assortment of colors.

Selecting Your Siding for Service

If you live in a rural area or in a community free from smoke and soot you may prefer one of the general line of USG Asbestos Cement Sidings. In this way you can effect a saving in cost with a sacrifice in surface protection, which may not be so important in the locality in which you live. On the other hand, in localities where the atmosphere is grime-laden and filled with dirt and dust—then you need the protection of

OTHER IMPORTANT USG FEATURES

Fire Protection—Made of Portland cement and asbestos fibres. Can not burn.

Lifetime Service—Made of lasting materials, USG Asbestos Cement Siding offers a lifetime of satisfaction.

Lower Costs—Never requires paint. Tighter walls help to reduce fuel bills.

Longer Shingles—Only 27" siding shingle available. Means less joints, better insulated wall.

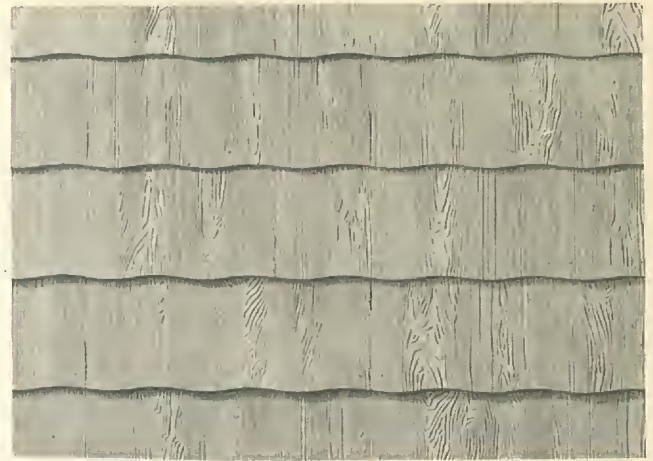
Die-Cut Edges—All edges die-cut simultaneously. Better alignment, tighter joints, neater job.

Strength Where Needed—Reinforced from top to bottom—the point of greatest strain.

Greater Texture Variation—24 different texture designs.

Color Uniformity—Full 28 days' curing assures true, lasting colors.

"Glatex" which stays clean longer and may be washed with soap and water. The "protected beauty" and ease of cleaning make "Glatex" well worth its slight additional cost, especially where smoke and dirt are problems.



The deep wavy lines and idealized wood grain texture of USG Wavy Butt Siding give them the appearance of wide wood siding so suitable to Colonial and other popular styles of architecture.



USG Thatch Butt Siding gives the impression of random width individual shingles. To safeguard against definite repetition of patterns, USG Thatch Butt Siding exclusively is made in two distinctive designs, each cut from a separate die.



USG Clapboard is a distinctive USG design. It gives the straight line appearance of Colonial clapboard so necessary for true Cape Cod and Colonial architecture.



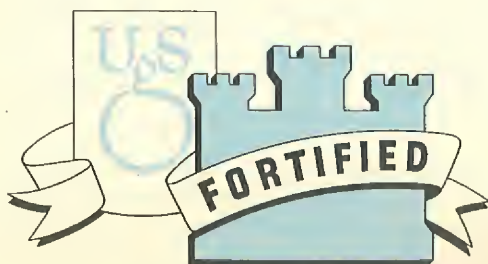
U S G PRODUCTS USED IN BUILDING ROOFS

Primarily, the selection of a roof for your home is based on a color and style that blends harmoniously with the coloring of your exterior walls and with the architecture of your house. Here again U S G offers a complete line of products from which you can choose the one that is best suited to your problems.

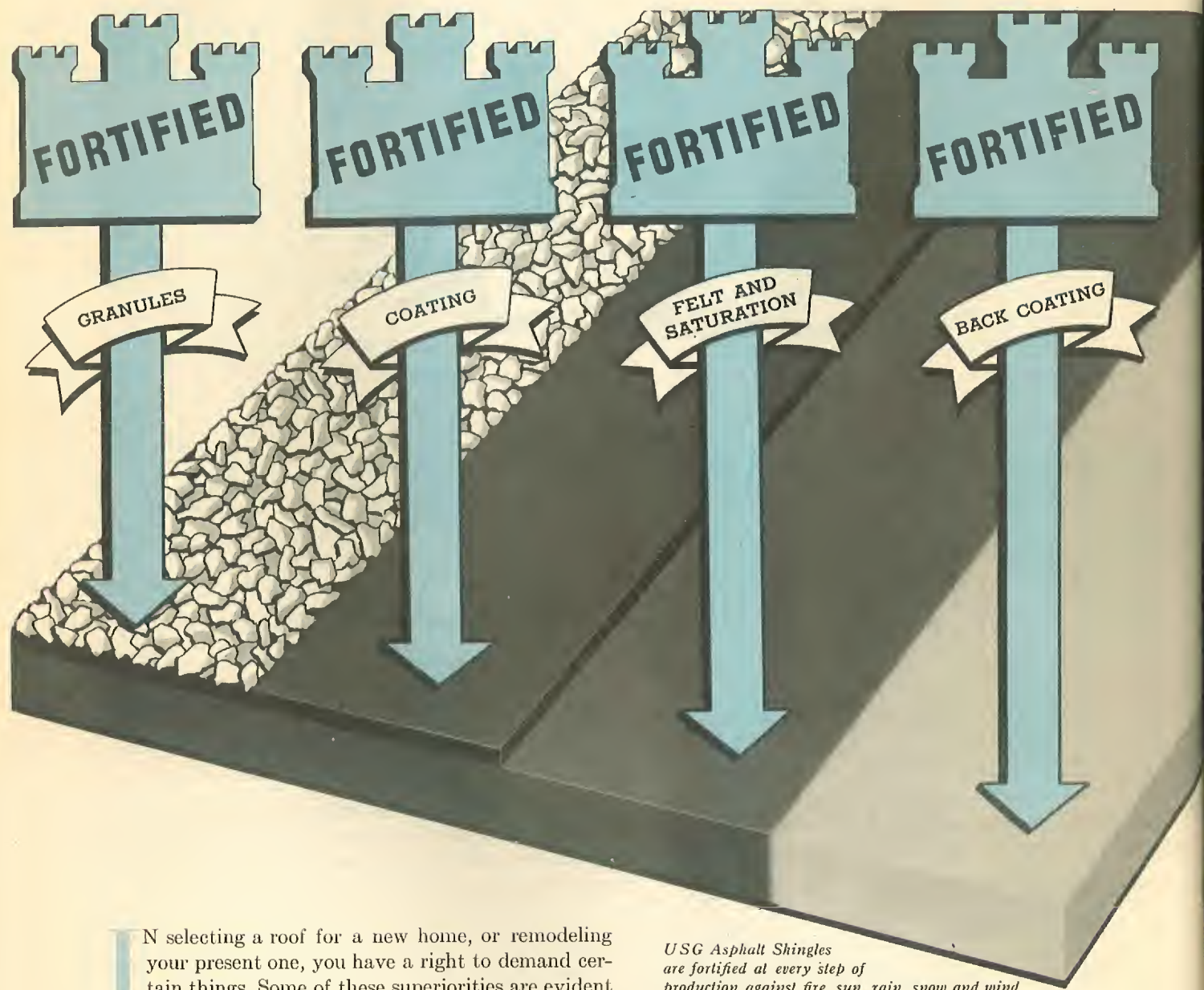
As we pointed out before, roof fires generally start from

chimney sparks or embers from nearby fires. Therefore, it is important to see that your roof is fire resistant as well as beautiful.

The U S G Roofing lines (both asphalt and asbestos cement) offer beauty in color and design, resistance to fire and are so designed that you will be able to find the pattern and shade you want at the price you want to pay.



USG ASPHALT SHINGLES FORTIFY YOUR ROOF



IN selecting a roof for a new home, or remodeling your present one, you have a right to demand certain things. Some of these superiorities are evident to the eye—others are “hidden values”—important qualifications almost solely dependent upon the reputation of the maker.

In selecting USG Asphalt Roofings and Shingles, you may place your demands high—you expect and get *Beauty*—in new glowing, colorful blends and refreshing textures; *Fire Resistance*—originating in materials which will not support combustion; *Weather Protection*—which results from quality built through and through—in-built quality which assures rugged resistance

USG Asphalt Shingles are fortified at every step of production against fire, sun, rain, snow and wind.

against the elements; *Low Cost Per Year*—the net of it is long life which means lower cost per year of wear.

From front to back, side to side, and end to end, USG roofings are built like a fortress—composed of fighting elements that survive in the war against wear. All of these materials are chosen only after searching tests in laboratories especially equipped for the purpose. Then these trials are further extended to include actual outdoor conditions.



This attractive house in White Plains, New York, has USG Asphalt Shingles. This home was designed by Victor Ciekin, Architect.

The granules which give color and add fire resistance to USG Asphalt Shingles are made of minerals tested for fadeproof qualities. They are embedded in a coating of special formula, calculated to resist sudden changes in temperature and hold the granules in a tight grip.

Full-bodied asphalt saturation of the felt which forms the base provides a reservoir of life-preserving asphalt, protection against the drying effect of strong sunlight.

Many Colors and Designs

The felt body is made of selected materials which give it absorbent qualities to allow it to drink up its full quota of life-preserving asphalt combined with strength, due to strong fibers made from carefully selected rags.

The backs of the USG Asphalt Shingles are coated

with a compound which seals them against moisture.

Shingles are made in exclusive USG types and designs with locking devices which hold them together as a unit and defy the attacks of blustering winds. Some of these shingles are made especially for applying right over old roofs.

In USG Asphalt Shingles, Sidings and Roll Roofings, you have a complete choice of color, a wide range of types, shapes, sizes and prices, to harmonize with any color scheme and price requirement. All of these products are "Fortified" against fire, sun, rain, snow and wind.

Best of all is the assurance that USG always means quality—quality that must prove itself in the most severe tests that technicians can devise and re-proved in actual conditions of service.

USG ASBESTOS SHINGLES

The ideal roof is waterproof, fireproof, beautiful and low in cost per year of service. A roof covered with USG Asbestos Cement Shingles meets every one of these requirements. There is nothing in them which can burn. Consequently, they are given the highest ratings of the Underwriters' Laboratories.

These shingles continue to get harder year after year. This means lifetime service. The surface pores are closed by 9,000 ton pressure. Color uniformity is assured by full 28 days curing. As for design, you have your choice of three popular shapes.

USG American Method Tapered Shingles are especially designed by leading architects and outstanding color designers to provide a roof of unusual beauty and architectural appeal for the finest homes. They present a rugged beauty similar to that of the weather-beaten shingles so commonly used in the days of our forefathers.

USG Dutch Lap Shingles are available to those who prefer the traditional horizontal and vertical lines, together with idealized wood graining, to the plain texture diagonal design of the hexagon shingle.

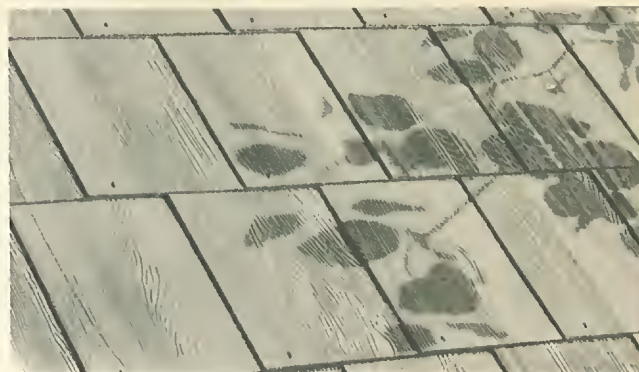
The simplicity and self-aligning features of the Dutch Lap method of application materially reduces application costs. This saving plus the low cost of the shingles themselves makes the Dutch Lap roof one of the most economical asbestos cement shingle roofs available.

Hexagonal Shingles are typical of the attractive roofs so often seen in the rural sections of France. At low cost they provide protection from fire and weather. The smooth finish emphasizes the bright, clean appearance of the shingles. They bear Underwriters' Class B label, which in many localities lowers insurance costs.

Hexagonal Shingles are the lowest priced asbestos cement roofing shingles, and thus combine lasting protection with low cost. They are particularly suitable for medium priced homes and other structures where practical value is desired without sacrificing appearance.

A wide variety of colors and types enables you to select or your architect to specify the roof which best conforms to your requirements of design, whether the building is a modest cottage or an expensive home. In addition to their growing popularity in new construc-

tion, USG Asbestos Cement Shingles are being increasingly applied over other types of materials which are not as fireproof, lasting or beautiful.



USG Dutch Lap Shingles provide the traditional horizontal and vertical lines, together with idealized wood graining preferred by many people. They carry Class "B" Underwriters' label.



USG American Method Tapered Shingles present a rugged beauty similar to that of the weather-beaten shingles so commonly used in the early days. They carry Class "A" Underwriters' label.



USG Hexagonal Shingles are typical of the attractive roofs so often seen in the rural sections of France. At low cost they provide protection from fire and weather. They carry Class "B" Underwriters' label.



USG PRODUCTS FOR INSULATING YOUR HOME

USG offers many different types of insulation products to give the service which various job conditions and budgets require.

As we have shown in our discussion on a "Yardstick for Selecting Insulation," each job requires individual consideration. The cost of your home, the fuel you burn, the climate in which you live, the architecture of your home, whether you are building or modernizing—all these affect your final decision on the material best suited to *your* problem.

For this reason, for example, USG sells Red Top Insulating Wool Blankets in three thicknesses and three

types, and also in loose or granulated form for blowing into sidewalls.

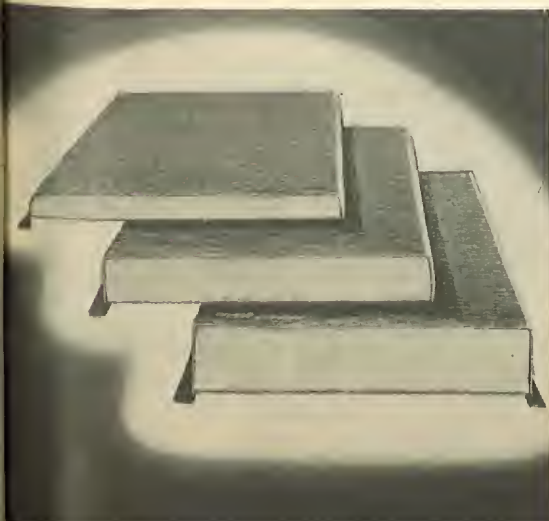
To fit jobs that call for an insulation that provides structural strength and rigidity, USG makes insulating sheathing, laths and wallboards. For those who want to combine insulation with predecorated wall and ceiling finishes or with sound absorption, there are USG products specially developed to fit their needs.

With such a complete, diversified range of insulation products, USG is in a position to give unbiased advice to architects, owners and builders—to provide the product best suited to your requirements.

Red Top Insulating Blankets are sold in both roll and bat type, in three thicknesses, inch, medium and thick, completely enclosed in an envelope. There is no chance of skinning the job.

Red Top Wool is extremely light in weight—no burden of heavy dead load. It is free from foreign materials which add weight but contribute nothing to insulating efficiency.

Red Top Blankets are lively like a steel spring. Compress the mat, release it, and the resilient wool fluffs back. It holds its shape and preserves its insulating properties.



RED TOP INSULATING WOOL

A Fiberglas Product

Enclosed in an envelope—made of Fiberglas—manufactured by precision methods—Red Top Insulating Wool more than meets the basic standards of insulation value. You or your architect may select the type and thickness that will meet your requirements. There is no danger of splitting the blanket or skimping the job.

Red Top Insulating Wool is made from long silky glass fibres, bound together with a special binder. The result is a lively spring action which holds the material snugly in place. The envelope which encloses the wool has a vapor barrier on the warm side (in winter) and a vapor porous material on the cool side. These features along with the new air spacing flange provide the very latest contribution in condensation control and high insulating efficiency.

Red Top Insulating Wool is made in rolls for larger expanses, Bats in shorter sections for cut-up spaces, and Junior Bats, which are not enclosed in the protective envelope. The Junior Bats are used in remodeling work and for tucking in odd spaces. These various types are shown in illustrations on this page. Through inch, medium and thick sizes, you have a selective line which meets every job condition and pocketbook.

In addition, there are USG Insulating Wool Products especially adapted for blowing into sidewalls or roof spaces on remodeling jobs.

The new improved Red Top Insulating Wool was built to give you eleven of the twelve ideal insulation points.

1. HEAT RESISTANT—Built to predetermined, dependable values. Checked by recognized laboratories.

2. WIDE RANGE OF USE—Made in Inch, Medium and Thick Blankets, and Junior Bats . . . presenting a wide range to meet various job conditions and price requirements.

3. ASSURED EFFECTIVENESS—Made to rigid specifications, predimensioned, completely enclosed, providing a uniformly effective insulating blanket.

4. DURABILITY—Made of silica—lasting like the sands of time.

5. LIGHT WEIGHT—Less dead load . . . light to handle . . . free from dust and impurities which add weight but contribute nothing to insulating efficiency.

6. LOW HEAT CAPACITY—Does not tend to hold heat in the insulation itself.

7. RESISTANT TO CONDENSATION—Vapor barrier on warm side . . . porous envelope on cool side . . . automatic air spacing flange—these three features provide new and better condensation control.

8. EASE OF INSTALLATION—Tailored to fit . . . holds itself in place . . . no tendency to pack or shake together . . . light, easy, quick to apply.

9. FIRE RESISTANT—The mat is made of Fiberglas . . . naturally it cannot burn.

10. HARMLESS TO HEALTH—Free of odors . . . free of dust . . . repellent to vermin.

11. ECONOMY—The wide range of this selective line meets varying job conditions and budgets.

In addition, Red Top Wool Insulating Blanket is as permanent in its benefits as the house itself.

Red Top Insulating Wool Blankets are tailored to fit the job like a custom-made suit of clothes. This means faster application with less waste of time and material, and provides wind resistance.

The lively resiliency of the Fiberglas mat holds the blanket steadily between the studs; it stays in place; it cannot settle or shake down and leave uninsulated spaces.

Notice the automatic air spacing flange which provides a recess for the vapor barrier, keeping it away from wet plaster keys. A second air space is automatically provided on the cool side.



WEATHERWOOD INSULATING BOARD INSULATING ROCKLATH INSULATING SHEETROCK

For Economical Double Duty Insulation

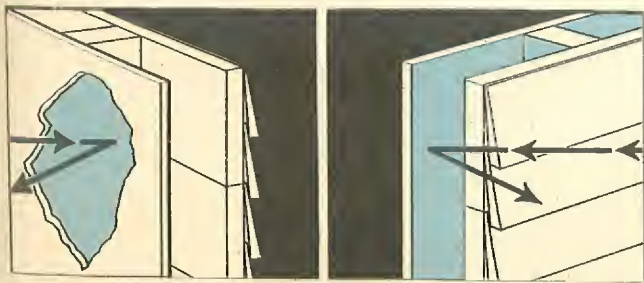
Often circumstances do not call for or permit the use of an insulation of the highest heat resistance. The budget of a small low cost house, for example, may not permit the use of Red Top Insulating Wool throughout. Or a home with a great deal of roof area may require it only in the attic, if proper attention is given to storm sash, weather stripping and a less efficient wall insulation. A garage needs less insulation than the house.

All houses do not have the same insulation requirements, although all homes, no matter how small or inexpensive, need insulation in both walls and attics.

To fill these needs and to help architects and dealers give unbiased insulation advice, U S G has developed a complete line of rigid board insulation products. They are economical insulations. Each does double duty, efficiently insulates and serves at least one other purpose.

Weatherwood Insulating Interior Finishes. These products provide a wall and ceiling finish, along with insulation. They are especially adapted for attic rooms, recreation rooms and for covering old walls and ceilings. Many of them are predecorated.

Insulating Sheetrock. A fireproof gypsum wallboard which gives a wall finish, ready for any decoration. On the side away from the room, facing the air space between studs or rafters, the board is covered with aluminum foil, which repels radiant heat.



(Left) This shows what happens with Insulating Rocklath or Sheetrock in winter. (Right) This shows how Insulating Rocklath or Insulating Sheetrock repel summer heat by reflecting rays of radiant heat.

Weatherwood Insulating Lath. Provides an efficient plaster base, as well as effective insulation for the interior and outside walls.

Insulating Rocklath. Combines the advantages of a fireproof gypsum lath with efficient metal foil insulation for use on the inside of exterior walls.

Weatherwood T & G 2'x8' Asphalt Coated Sheathing. A 3-in-1 product, giving efficient insulation, weather protection, and a rigid sheathing board.



Weatherwood Asphalt Coated Sheathing (shown above) and Weatherwood Plaster Base provide efficient economical insulation, plus structural value. They are 3-in-1 materials.





US G PRODUCTS FOR INTERIOR WALLS, PARTITIONS AND CEILINGS

The United States Gypsum Company provides a range of products for walls and ceilings as wide as the public's building requirements.

For example, USG furnishes Metal Lath Products, Perforated Rocklath, Plain Rocklath, Insulating Rocklath and Weatherwood Insulating Lath. In addition, for "crack protected" walls and ceilings, there are several plastering systems for your consideration.

In plasters, too, there are a diversity of USG materials each of them processed to provide definite characteristics, to meet specific job conditions and requirements. Thus USG makes base coat plasters, finishing plaster and lime, moulding plaster for ornamental work and plasters for surfaces subject to high humidity and unusual wear.

Frequently wallboard is the logical choice for walls and ceilings, particularly on remodeling jobs. Therefore, USG offers a most complete range of wallboards for your selection. Examples are Sheetrock, the fireproof gypsum wallboard which provides a smooth surface ready for any decoration, or Weatherwood Blendtex which combines insulation with pre-decorated walls and ceilings.

Finally, you have a wide choice of colors and textures in USG Paints which were developed by USG after years of experience with walls and ceilings.

Each of the major USG interior wall and ceiling products is described on the following pages. From the descriptions and illustrations you can choose those whose characteristics fit the construction requirements of *your* home.



PERFORATED ROCKLATH

Perforated Rocklath, plus Red Top Plaster, meets the four major requirements of a good interior finish, because this combination provides:

- (1) A hard, lasting surface suitable for any type of decoration.
- (2) Rigid, non-warping walls and ceilings, that are free from lath marks or stains.
- (3) Protection against fire, both for the building and for its occupants.
- (4) Economical, low-cost construction.

Perforated Rocklath is a gypsum plaster base composed of a core of gypsum plaster between two sheets of tough, fibrous material. It comes in sheets 16" wide and 48" long, with $\frac{3}{4}$ " diameter perforations spaced 4" apart.



Protected against fire by Perforated Rocklath and plaster.

When plaster is applied to the surface of Perforated Rocklath, it grips the lath with twice the strength it would have on the average lath. In addition to the normal bond or "suction" between Rocklath and plaster, the regularly spaced perforations on the surface of the lath provide a second way for the plaster to grip the lath. Plaster is forced through these holes, forming "fingers" of wet plaster that bend when they reach the back side of the lath. These bent "fingers," when they set, hold the plaster firmly to your walls with a mechanical key and supplement the grip already formed by the plaster with the surface of the Rocklath. Falling plaster is never heard of where Perforated Rocklath is used.

Greater Fire Protection

In times of fire emergency, your home's construction will be put to the acid safety test. If fire breaks out in one part of the house, your walls and ceilings should be constructed to confine the fire to that part of the house long enough to give everybody time to escape to safety

or to bring the fire under control. Perforated Rocklath construction will give you this protection—and at no added cost over combustible lath construction. Being made of gypsum, Perforated Rocklath *will not burn*.

Tests show that partitions using this lath qualify for a one hour fire rating. Such a partition will keep fire that starts in one room from spreading to the next room for over an hour—much more than adequate time to remove all of the occupants from the average house and to put out most fires.

Protects Against Lath Marks

Lath marks and stains—those dark horizontal streaks that occur frequently on walls where ordinary laths are used—have been practically eliminated by Perforated Rocklath.

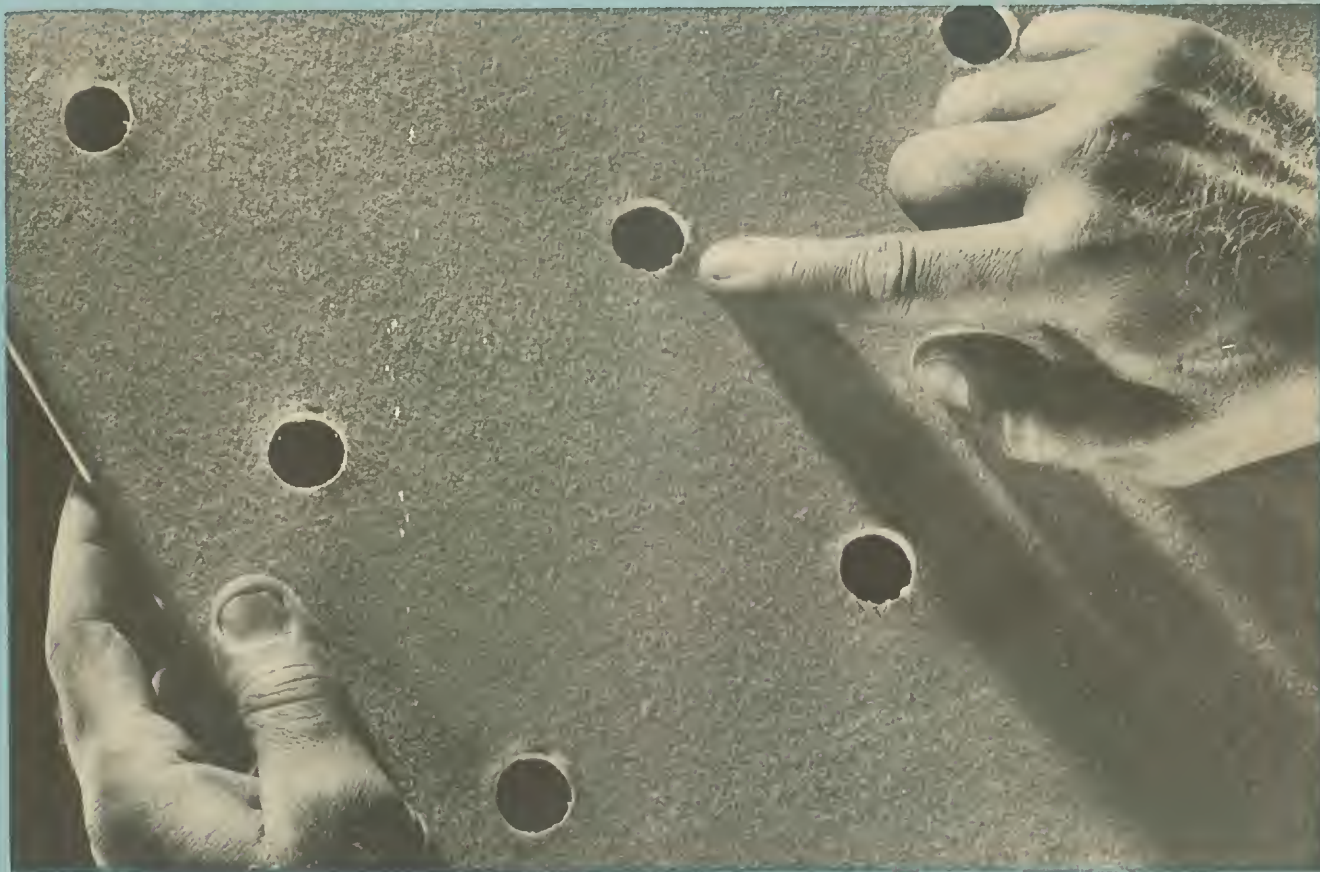
Lath marks are caused by inequalities in temperature between wood lath and the space around it. More air passes through the space between pieces of lath than through the laths themselves, and consequently more dirt is deposited there than on the lath. This causes the characteristic discoloration found on many walls plastered over wood lath.

Perforated Rocklath, unlike wood lath, comes in large sheets rather than narrow strips and when covered with a proper thickness of gypsum plaster, the entire area presents a uniform surface with no temperature inequalities to cause lath marks.

Stains come from moisture or sap which seeps out of lath and through the plaster wall or ceiling, causing unsightly spots and streaks. Rocklath, containing no organic matter, no sap or free water, cannot stain or streak walls and ceilings.



Note how plaster is forced through the holes of Perforated Rocklath, forming "fingers" that hold plaster firmly to your walls—supplementing the grip already formed by the plaster with the surface of the Perforated Rocklath.



We punch Rocklath full of holes—to make a stronger wall, a wall that holds plaster with a welded and riveted grip, a welded grip of gypsum lath and gypsum plaster, plus the rivets formed by the plaster forced into the holes.

Rocklath Doesn't Warp or Buckle

Perforated Rocklath, literally a rock material, cannot warp or buckle. This eliminates one of the major causes of defaced walls and ceilings plastered over old-fashioned lath.

Perforated Rocklath stays in place, once it is properly attached to the framing. It forms a durable, rigid base for plaster—a staunch background for lastingly beautiful walls and ceilings.

Emergencies Prove Rocklath Qualities

The walls and ceilings of your home are not intended to suffer abuse.

Yet the "margin of safety" which experience has shown Perforated Rocklath walls and ceilings to possess is reassuring. Our files contain many accounts, for example, of houses practically inundated by floods or hurricanes

in which the Rocklath walls and ceilings were found to be structurally sound, without cracks or blemishes, after the waters were drained away.



The attractive walls and ceilings of this beautifully designed living room are made with Perforated Rocklath and Red Top Plaster. The home of James F. Eppenstein, Architect, Chicago.

WEATHERWOOD INSULATING PLASTER BASE AND PYROBAR GYPSUM PARTITION TILE

Weatherwood Insulating Plaster Base

Weatherwood Insulating Lath is a felted wood fiber product, highly resistant to moisture, which performs two very important functions at once—it provides a strong, sound plaster base and also gives your house comfortable, fuel-saving insulation.

Millions of air cells in the fibers of this plaster base retard the passage of heat in either direction—thus it keeps the house cooler in summer, warmer in winter.

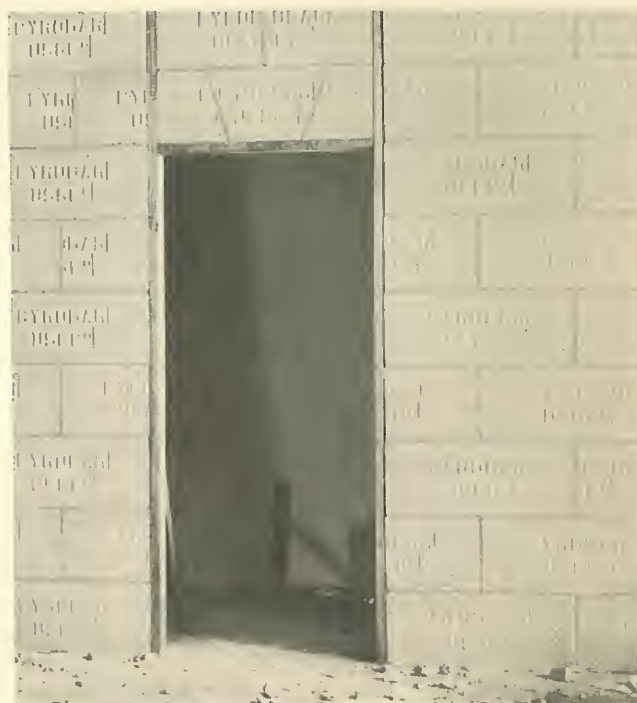
Fasnap Reinforcement

Fasnap is a steel reinforcement, quickly snapped in place along horizontal joints, to protect against cracking—at no increase in cost over unreinforced plaster base. Easy to install, this plaster base is quickly nailed to wood studs or ceiling joists.

Weatherwood Insulating Plaster Base combines economical insulation with a structural function. It is used, therefore, in places where there is a decided temperature difference between one side of the wall and the other. For areas where insulation is not necessary (such as lower floor ceilings or interior partitions) there is generally an advantage in using Rocklath or Red Top Metal Lath as the plaster base.



Note the steel reinforcement on Weatherwood Insulating Lath, which gives protection against cracking at the joints.



Fireproof Pyrobar Partition Tile makes an ideal fire protective enclosure for furnace or heater rooms. The plaster is applied directly to this material.

Pyrobar Gypsum Partition Tile

Pyrobar Gypsum Partition Tile is a pre-formed gypsum tile made in various thicknesses to meet conditions of ceiling height and other job requirements.

Construction using Pyrobar Tile has been subjected to a series of exhaustive, punishing tests over a period of 38 years. During these tests, partitions using 3-inch Pyrobar Tile covered on both sides with $\frac{1}{2}$ " of plaster, had one side subjected to a temperature above the melting point of iron for one and one-half hours and then was submitted to a 50-pound pressure stream of water from a fire hose. After the tests, it was found that neither fire, smoke nor water had passed through the partition and that the temperature on the side away from the fire had risen only 90 degrees Fahrenheit.

Obviously, Pyrobar Gypsum Partition Tile, with its remarkable record of fire resistance, is the logical material to use on furnace rooms and fuel storage room walls, where circumstances might, at any time, unleash a life-endangering fire. Pyrobar is an ideal plaster base—being made of gypsum, the same material as plaster.

RED TOP METAL LATH

Fireproof Steel Reinforcing for Walls and Ceilings

YOU want permanence, beauty and fire safety in your walls and ceilings. Red Top Metal Lath is one of the USG materials which will insure these things.

It reinforces plaster ceilings and walls. Its steel meshes are embedded in the plaster, giving it real protection and support. Underwriters' tests show that Red Top Metal Lath and Plaster on wood studs or joists will stop the progress of a fire for over an hour.

For the very finest in plastered walls and ceilings, use Red Top Metal Lath as a base for Red Top Plaster. But whether or not you use it on the rest of the house, insist that it be used at the following vulnerable points: the basement ceiling—particularly over the furnace and coal bin; the wall above the fireplace; back of the kitchen range; around and under the stairs. These are places generally conceded to be the worst fire hazards in the average house, and the extra fire protection offered by Red Top Metal Lath may well save the home owner many times his investment in fire-loss savings.

The Red Top Metal Arch provides a unit plaster base of symmetry and uniformity for all types of plastered arched openings. In one operation it is in place, ready for the plasterers.



Red Top Metal Lath provides a strong, rigid, fireproof base for both walls and ceilings. Note the attractive arch openings which can be provided with Red Top Metal Arches.

For beauty and permanence of plastered surfaces, use Red Top Metal Lath on ceilings of important rooms, on corners (for reinforcement), on tile walls, such as in the bathroom, and over pipes and heat ducts passing through walls and over ceilings.

Red Top Metal Lath is made of the finest steels, in modern, up-to-the-minute mills. Each operation performed on the huge machines is carefully watched and the lath checked and inspected at every stage of fabrication.

Red Top Metal Lath

The term "Red Top Metal Lath" embraces a number of different items and accessories—too numerous to mention all of them here. Generally, the laths are di-

vided into the following groups: Red Top Diamond Mesh, Red Top Z-Rib and Red Top Rib Lath. These laths are all stiff plaster bases, excellent for lathing entire ceilings or rooms.

Red Top Diamond Mesh, with its 11,000 openings per square yard, assures plaster economy and "steel-strengthened plastering" at low cost. It is a rigid, easily erected all-purpose lath that serves as an excellent base and reinforcement for all types of plain and ornamental plastering, and fireproofing.

Red Top Z-Rib Lath is exclusive in design. It adds exceptional rigidity and provides shelves to hold the wet plaster in place on both front and back. By the combination of these sturdy ribs and its "herringbone" type of mesh for additional rigidity, every step is made easier, without waste of plaster and with positive economy.

Red Top Corner Bead

Supplementing the Red Top line of metal lath are the various types of Corner Beads. This very important accessory is fitted over "outside" corners to protect the plaster against damaging blows. It presents a narrow ridge of steel at the exact corner so that anything bumping it will hit the steel instead of harming the plaster.

Red Top Cornerite

Red Top Cornerite is a strip of metal lath that has been bent to a right angle along its length. It fits into the "inside" corners to reinforce plaster at this important point. Cornerite should be used over Rocklath, Insulating Lath and wood lath, but is not required if you use any of the USG Plastering Systems.

Red Top Strip Lath

Red Top Strip Lath is a flat, long and narrow strip of metal lath used to protect walls above the upper corners of doors and windows against plaster cracks. Like



Red Top Cornerite should be used on inside corners over wood lath, Rocklath, Insulating Lath. It reinforces them and prevents unsightly corner cracks from appearing in the plaster. Use Red Top Strip Lath to cover sections of walls and ceilings where there are joints which might cause cracks, especially around window and door frames when metal lath is not used for plaster base.

Cornerite, Strip Lath should be used over Rocklath, Insulating Lath and wood lath, but is not required for use with any of the USG Plastering Systems.

Red Top Metal Arches

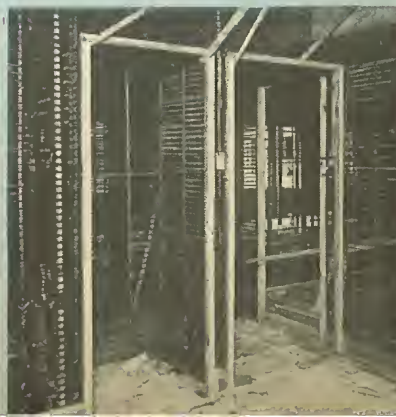
Red Top Metal Arches provide a good plaster base of symmetry and uniformity for all types of plastered arched openings. They eliminate a very difficult operation—the construction of true, symmetrically curved wooden forms around the tops of arched doors and windows—and in this way save the home owner both time and money. They are furnished in seven standard sizes which can be adapted to practically all types of openings up to 72 inches in width.

Red Top Metal Lath covered with wood fiber plaster enjoys a one-hour fire rating. Use it on basement ceilings particularly over furnace rooms.

It is important to protect stair wells, as their collapse in case of fire may prevent exit from the house. Red Top Metal Lath and Plaster provides protection at this vulnerable point.

Red Top Z-Rib Lath is ideal for partitions and ceilings. It is easy to erect and provides a rigid, fireproof base for plaster.

Note how plaster grips the Z-Rib Lath at the back. This lath is carefully designed to provide ample keys without wasting plaster.



USG PLASTERING SYSTEMS FOR "CRACK PROTECTED" WALLS AND CEILINGS

A SWEEPING improvement in walls and ceilings came when the development of USG Plastering Systems made it possible to prevent plaster faults due to warping, twisting, settlement or other movement of studs and joists.

These systems provide the greatest insurance for smooth, durable walls and ceilings that may be had at any price. As a result of these new systems, plaster cracking, due to framing shrinkage and distortion, is practically eliminated.

Then USG Plastering Systems also eliminate streaks frequently seen in the past, particularly on ceilings, which show the pattern of the lath and studs in a grimy silhouette. This condition, in addition to its unsightly appearance, causes frequent washing and redecorating.

In addition, these systems act as an effective barrier to noise transference from one room to another through walls and ceilings.

How Is This Done?

When using a USG Plastering System, the lath and plastering, instead of being solidly attached to the framing members, are suspended on spring clips, much like the chassis of your motor car is suspended on springs, which carry the weight yet compensate for the road shocks.

Cracking—Where framing members tend to twist, sag, or warp, the spring clips absorb the movement and the plastered wall is not disturbed. Consequently, plaster cracks are kept to a minimum. As a matter of fact, with anything like average conditions, they seldom appear at all.

Streaking is caused by unequal temperatures, due to direct contact of the plaster base with framing members. By removing this contact, the USG Plastering

Framing-strained walls and ceilings that crack . . .



Walls and ceilings marred by lath and framing streaks



Hard, rigid walls and ceilings that telegraph every sound





The Rocklath Resilient System, for suspended walls and ceilings, preventing cracks, lath marks and reducing transmission of sound.

Resilient walls and ceilings that insure against cracks



Clean walls and ceilings that stay clean longer



Quiet walls and ceilings that reduce sound



Systems equalize the temperature and eliminate streaking due to this cause.

Sound sets up vibrations. In rigid walls these vibrations are usually carried to adjacent rooms through the framing members, but when sound strikes the Resilient Clips, it is largely absorbed—the vibration is dampened—the sound is deadened.

In addition to these other advantages, all component parts of these Resilient Systems are fireproof. The systems are comparatively low in cost.

How You Can Get These New Improvements in Plastering Systems

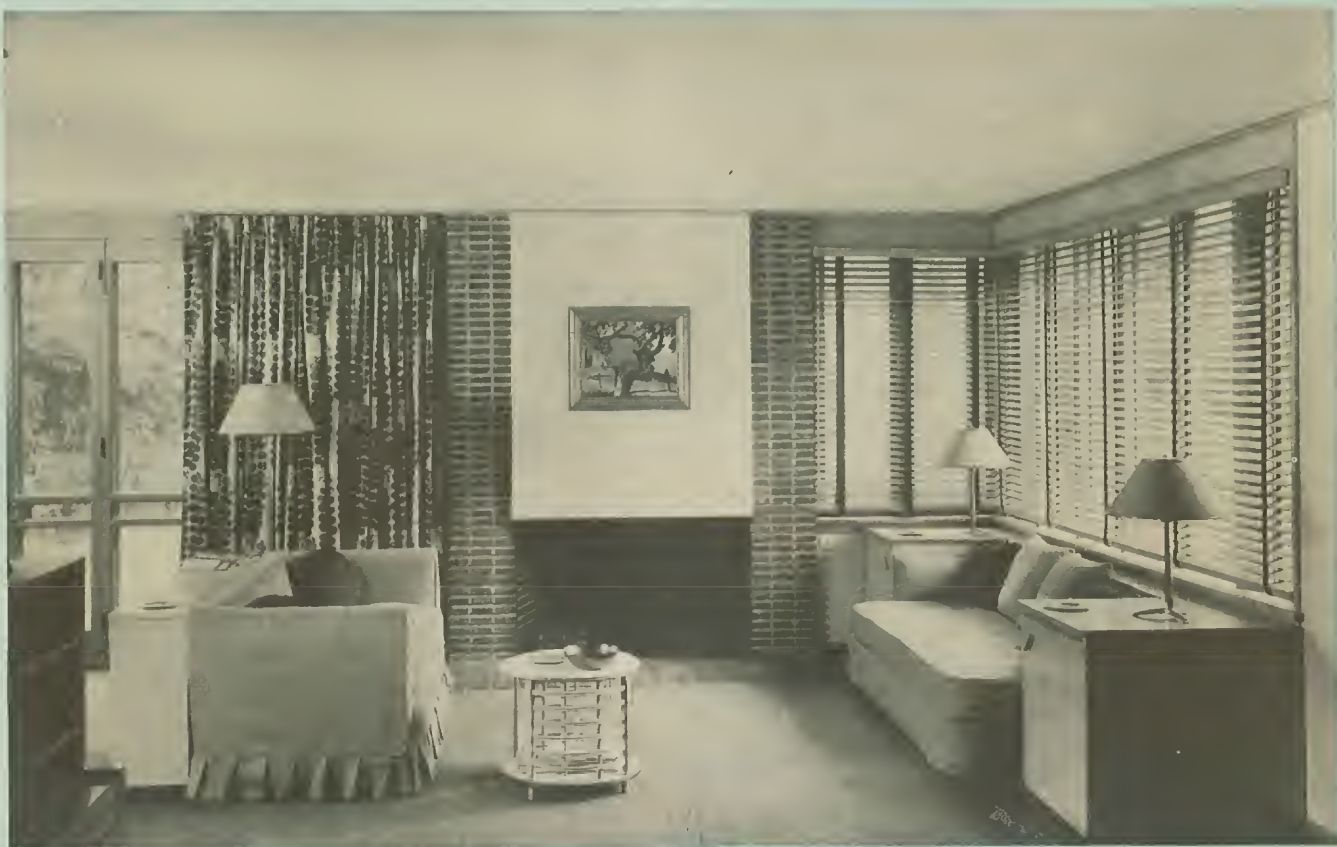
There are three different ways you can get the advantages of this resilient construction:

1. *Resilient Rocklath Plastering System*—This is composed of either Rocklath or Perforated Rocklath attached to the framing members with Resilient Spring Clips. No lath is nailed or fastened directly to the framing.
2. *Red Top Metal Lath Resilient System*—This is composed of metal lath attached to the framing members with Resilient Spring Clips. No lath is nailed or fastened directly to the framing.
3. *USG Bridjoint System*—Composed of Rocklath or Perforated Rocklath nailed to the studs, except that end joints of the board fall between rather than on the supports and the Rocklath is not nailed to framing at corners or ceiling line. The Bridjoint System helps compensate for frame movement and minimizes plaster cracks at the joints of the lath, at corners and at the ceiling line, and this is the most economical system—it generally costs no more than Rocklath and plaster applied the usual way.

These various systems accomplish similar results and lend themselves to standard wood, masonry or steel construction. Many owners of moderate priced homes are using these systems in some form in their best and most used rooms, such as living rooms, dining rooms, entrances or stair halls, and in bathrooms to help provide privacy.

Frequently either the USG Metal Lath or Rocklath Resilient Systems are used on ceilings in large rooms, with the Bridjoint System on the walls of all rooms and on walls and ceilings of smaller rooms. This combination provides maximum protection where it is needed most—in large ceiling areas, at real economy in cost.

In choosing the particular Resilient System best adapted to your needs, it is well to consult your architect. For complete data on any of these systems, write for our latest literature.



Attractively plastered living room in a home designed by Perkins, Wheeler & Will, Architects, Chicago.

RED TOP PLASTER AND LIME

For more than thirty years, Red Top Plaster has been the standard of gypsum plastering materials—the leader in all developments to improve plastering standards.

Being made of gypsum, Red Top Plaster is a fireproof material—it cannot burn. It will not expand and tear itself away from the surface to which it is applied, even when subjected to fire.

Years of constant, painstaking experiment and research have been spent in stabilizing the “set” of Red Top Plasters. To the prospective home owner, this means that he can count on his walls being ready for interior decoration sooner, without danger from moisture, or other damage to paint or wallpaper.

The United States Gypsum Company was not content, however, to stop with developing fine plasters. Our laboratories constantly exercise the most exacting and rigid control over manufacturing processes to assure finest quality and uniformity necessary to smooth, hard walls.

Our research showed that plaster ground into a very fine powder makes harder, stronger walls. Consequently, USG Plaster today has about the same fineness of grind found in most good face powders.

There are several different types of plaster, each of which is designed to have certain characteristics and to perform certain definite jobs. There are two general classes of plasters, base coat plasters and finish coat plasters. Among the base coat plasters are: Red Top Cement Plaster; Red Top Wood Fiber Plaster; Red Top Sanded Plaster. A large percentage of finish coats are made up of a mixture of Red Top Gauging Plaster and Hydrated Finishing Lime.

Red Top Cement Plaster

The term “Cement Plaster” is sometimes confusing. “Cement” when used here refers to plaster’s cementitious properties and should not be confused with the cement used in concrete construction. The term “Cement” when applied to plaster means that the material will cement something together.

That "something" is sand, a proper amount of which must be added to Cement Plaster before it can be applied to the wall or ceiling.

Since most base coat plastering work (the first two plaster coats to be applied over the lath) is done with Cement Plaster, it is very important to select a product that will provide a satisfactory foundation for succeeding plaster coats and decoration.

Like all Red Top Plasters, this product has the uniformity and quality that enables the home owner to obtain hard, strong, fire-resistant walls. It has the "stabilized set" that permits the plaster to set up in from two to six hours and to dry within 36 hours. Thus, the home owner saves time and money, for interior trim and finish may follow the plastering reasonably soon without danger from moisture.

Red Top Wood Fiber Plaster

Red Top Wood Fiber Plaster brings to building the good features of gypsum in even greater degree than cement plaster. It provides a harder, stronger, more fire-resistant base coat. It is not necessary to add sand as this plaster requires only water to prepare it for application. Thus the winter difficulties of sand—occasional need for thawing, etc.—are done away with as well as the trouble which may stem from inferior sand or the use of too much sand. It is called "Wood Fiber" plaster because a small amount of wood pulp fiber has been added to give it cohesiveness and better working qualities, as well as greater strength and hardness—two qualities which make more fire-resistant walls.

Red Top Sanded Plaster

Red Top Cement Plaster requires the addition of sand before it can be applied to a wall. It is not only the proper amount of sand that is important, but also the *quality* of sand used. Realizing that the quality of sand necessary to a good plastering job is hard to get in some localities, USG offers plaster already mixed with the exact amount of the correct quality of sand. A plaster for base coat work, Red Top Sanded Plaster can be applied over any lath after mixing with water only. It also eliminates difficulties frequently encountered with frozen sand when plastering in the winter.

Red Top Gauging Plaster

This is a finish material which, when blended with lime mortar, produces an exceptionally smooth, hard surface. There are two types of Red Top Gauging Plaster—White and Local. Local Gauging is made of rock quarried from the deposit at the particular mill where plaster is ordered. Thus, it is the same color as that mill's cement plaster (often a permissible gray).

USG's White Gauging Plasters, on the other hand, are

made of rock that has been carefully selected from an especially white gypsum deposit. For a truly white, hard, smooth surface we recommend White Gauging Plasters, made by the United States Gypsum Company.

Red Top Keene's Cement

Keene's Cement is ideally suited for rooms where walls are likely to be given abnormally rough treatment and hard wear or where there is high humidity, such as bathrooms, lavatories, kitchens, pantries, hallways, etc. Keene's Cement's dense, hard surface is often scored in blocks to produce a tile pattern and used as an economical substitute in such places as wainscots. When painted or enameled, it is washable.

Other gypsum plaster products manufactured by USG extensively used in building or remodeling homes are: *Oriental Interior Plaster*, which is a colored finish plaster for application over a gypsum base coat in place of the ordinary white coat; *Bondercrete*, which is a specially prepared product for use as base coat for plaster over concrete; *Red Top Moulding Plaster*, for use in coves, mouldings and other ornamental work; *Red Top Trowel Finish*, for gypsum plaster finish coats.

USG Lime Products

USG manufactures lime of the highest quality. The finish coat of plaster in most houses today is lime putty, to which gypsum gauging plaster should be added.

Your finish coat should be smooth, hard and uniform in whiteness so it will take any decoration. USG Lime is made from the country's finest limestone deposits.

USG Hydrated Lime, because of its purity and care in manufacturing, needs only about 12 hours soaking, after which it is ready for your walls and ceilings. It is free from black spots or unburned particles. USG Lime assures a hard, uniformly white finish.



An unusually pleasing moulding made from Red Top Moulding Plaster.

USG WALLBOARDS



Sheetrock Fireproof Wallboard is an ideal finish for utility rooms, basement recreation rooms or attic rooms. The recessed-edge board and the Perf-A-Tape joint treatment make wallboard joints vanish and leave a smooth, even surface ready for any type of decoration.

SHEETROCK

THE FIREPROOF WALLBOARD

The United States Gypsum Company makes a complete line of wallboards which often provide just the finishing material you want for walls and ceilings in den, living room, basement room, attic, garage or other rooms of the house.

They are briefly described on this and the following pages—for more detailed information, ask your dealer, or send for the descriptive literature available on them. SHEETROCK has qualities which are found in no other

type of wallboard. It is fireproof; it provides a smooth wall without visible joints or "bumps"; it takes any kind of decoration; it will not warp or buckle.

The *ideal* form of wallboard would be one which we could ship as a complete unit—one complete wall or ceiling, for instance. Such a wallboard would eliminate all joints and would provide a smooth, even, unbroken decorating surface. But such a wallboard borders on the impossible because it couldn't be manufactured and,



HOW THE JOINTS VANISH: 1, Recessed-Edge Sheetrock joints form a channel which is filled with a special cement quickly and easily applied. 2, Perf-A-Tape, a strong perforated fiber tape with chamfered edges, is imbedded in the cement. 3, A second coating of cement fills the channel and perfects a flush surface over the joint. 4, After drying, cement is sandpapered evenly, assuring a smooth surface for any decoration.



The picture above shows Textone being applied over Recessed-Edge Sheetrock-Perf-A-Tape walls for fine textured effect. The insert shows how Colonial stippled effect is obtained with Textone over a Recessed-Edge Sheetrock wall.

because of its size, couldn't be shipped by any present mode of transportation. In order to get a product resembling this ideal board as closely as possible, it is necessary to hide these joints—to make them smooth and invisible when decorated.

How the Joints Are Hidden

Recessed-Edge Sheetrock and the Perf-A-Tape Joint System do just that. The edges of the board, as they butt together, are slightly depressed to form a recessed edge. A strong fiber tape, called Perf-A-Tape, is imbedded in a specially prepared cement which has previously been spread in these recesses. When firmly imbedded, the Perf-A-Tape is then covered with more cement and allowed to set until the cement is dry. When dry, the joint is sandpapered down smooth and flush with the surface of the board. This joint, when properly applied and finished, is as strong as the Sheetrock itself.

Result—a strong, sound wall which may be papered or painted without fear of visible joints. Thus, Sheetrock comes very close to our definition of the ideal form of wallboard.

For flat wall decoration over Sheetrock, USG Texolite is the most economical and effective paint to use. It dries within an hour, comes in a variety of beautiful colors, has no objectionable paint odor and one coat usually covers most surfaces. Or, if you prefer, you can decorate your Sheetrock walls and ceilings with any of the commonly used decorative materials—oil paint, wallpaper, canvas, enamel, etc.

Fireproof—Won't Warp or Buckle

Recessed-Edge Sheetrock—the Fireproof Wallboard, is composed of a gypsum core sandwiched between two tough, fibrous surfaces. The gypsum core makes this board fireproof, as gypsum will not burn or support combustion. It will not even let high temperatures pass through it until the water has been driven out of the gypsum, which is a slow process. Thus, it makes an excellent wallboard to apply over wood studs and joists or right over old, marred walls and ceilings.

Gypsum, since it is a rock, will not expand or contract with changes in temperature and water will not cause it to become distorted. Because of these qualities of gypsum, Sheetrock will not crack, warp or buckle—it stays firmly in place, a fireproof background for any decoration, architecture or furnishings.

Quarter-Inch Sheetrock

Here is a wallboard built to order for remodeling. It is thin enough to go right over old walls and still fit window casings, mouldings, etc., and can be bent to fit

curved surfaces. It has the same non-warping qualities as the other types of Sheetrock and the same adaptability to any kind of decoration. If ceilings are smooth and true and their only defects are cracks and discoloration, Quarter-Inch Sheetrock can be applied directly over the old finish. It is one of the most inexpensive yet substantial means of redecorating.

Wood Grained Sheetrock

Sheetrock is also available in a form that combines the beauty of fine wood paneling with the fire protection afforded by the gypsum core in Sheetrock. Photographic and printing processes simulating the rich graining of Walnut, Matched Walnut, Knotty Pine and Douglas Fir give this wallboard unusual adaptability to walls where fine wood paneling is desired—at wallboard cost. It is extensively used in dens, recreation rooms and in summer cabins. In the manufacturing process Wood Grained Sheetrock is given a durable, lasting surface by treating it with a coat of lacquer, but if a varnished or waxed finish is desired, it can be applied easily and quickly.

Like the other types of Sheetrock, the Wood Grained board is fireproof, non-warping, strong, durable and easy to erect.

Sheetrock Tileboard

Sheetrock Tileboard is an ideal material for kitchens, bathrooms and lavatories. It makes possible beautiful tiled wall effects at gypsum wallboard economy and when lacquered and enameled provides surfaces that are easily washed. Its tile design is obtained through permanent indentations in the face of the board which are made to represent mortar joints in ceramic tile.



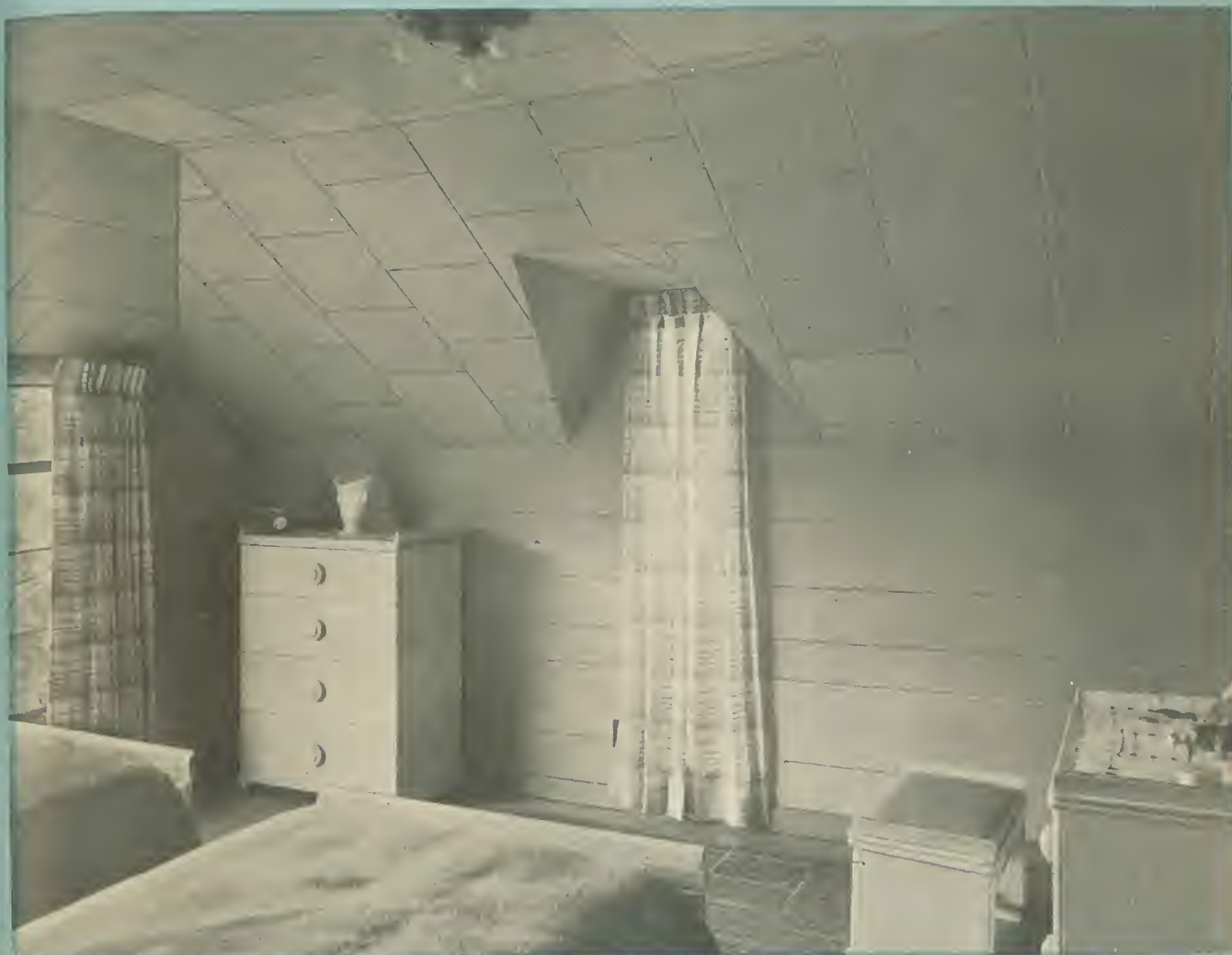
Sheetrock, the fireproof wallboard, offers wood grained finishes in walnut, matched walnut, knotty pine, and Douglas Fir.



Sheetrock Tileboard has tile indentations, similar to ceramic tile joints, permanently embossed in its surface.



Quarter-inch Sheetrock, because it can be easily bent, is an ideal material to use on curved surfaces. It is also well suited to covering old walls and ceilings.



In this attractive attic bedroom, Weatherwood Blendtex Plank in random widths is used on the walls, and Weatherwood Blendtex Tile is on the ceiling.

WEATHERWOOD INTERIOR FINISH

New beauty, comfort, quiet and fuel savings are brought into the home by Weatherwood Blendtex Tile and Plank. A new note in wall and ceiling finishes, Weatherwood Blendtex is a four-way product that insulates, builds, decorates and quiets sound all at one time, in one material, at one low cost. Its specially treated surface is durable and holds its richness and freshness of colors and texture.

Insulating and Sound Control Qualities

Weatherwood Blendtex Tile and Plank help make the home warmer in winter and cooler in summer. It not only reduces fuel costs, but makes homes easier to heat and in addition reduces drafts. As a comparative measure, the insulation value of 1" of Weatherwood Blendtex is equivalent to a 15" brick wall.

The process of manufacturing Weatherwood Blendtex gives to this material sound-absorbing qualities which lend an atmosphere of quiet to rooms of all types. Essentially, it is a homogeneous matting of wood fibers which entrap thousands of air spaces. This sound-quieting effect may be compared to a room having heavy rugs and drapes. Weatherwood Blendtex Tile and Plank absorb sound in the same manner.

The toughness and rigidity of Weatherwood Blendtex Tile and Plank are important properties of this material. Any structure built with it is stronger and resists distortion to a marked degree. The interlacing of the long wood fibers in the manufacturing process produces a strong fiber mat which gives structural strength to the wall on which it is applied.

Variety, Flexibility in Pattern and Color

The attractively textured Weatherwood Blendtex is a unit wall or ceiling material that is predecorated in soft, blended pastel shades. To give it variety and flexibility of pattern, it is made in several sizes in both the tile and the plank forms. By utilizing these different sizes, forms and shades, the home owner may secure a wall and ceiling suited harmoniously with the house's interior furnishings, and with each other. In doing this, the monotony of a single color or pattern is avoided.

When Weatherwood Blendtex is applied to a wall or ceiling, no further decoration is needed. It is a popular finish in homes because of the pleasant, unobtrusive background which it gives to rugs, draperies and furniture. It fits especially well into fishing and hunting lodges or summer homes on the shore or in the mountains.

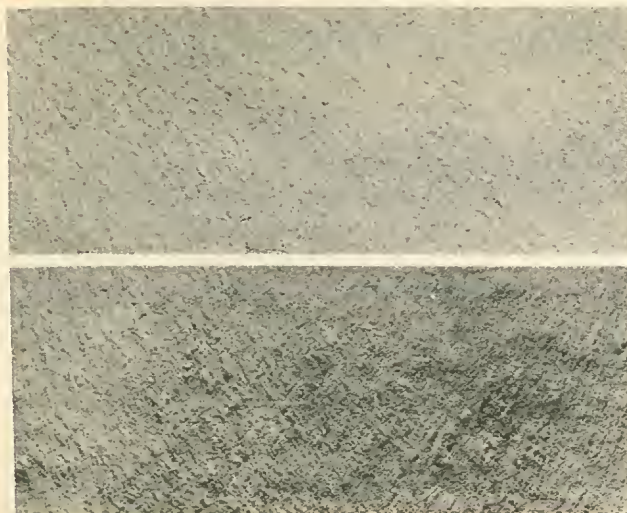
Ideal for Remodeling

Some place in your home there may be a need and a place for another room—perhaps an attic room, children's room, den or recreation room. Because it is inexpensive and easy to erect, goes quickly and easily over old walls with a minimum of inconvenience and muss every home owner dreads, Weatherwood Blendtex is ideal for this type of remodeling work.

Although it can be adapted to any type of interior architecture, decorators find Weatherwood Blendtex an exceptionally satisfactory finish to accompany modern furniture.

Weatherwood Building Board

Weatherwood Building Board, in contrast with the Blendtex Tile and Plank, is made in large sheets. It is a tough, durable, economical building board available in two colors (ivory and greytan) and two surfaces (skin surface or textured).



Weatherwood Building Board offers two colors, ivory and greytan; two surfaces, Hi-Lite and texture, in large, easily installed units.



Weatherwood Duplex Interior Finish is a tough, durable low cost wall-board of many uses.

Generally, Weatherwood Building Board should be used on large areas where no variation in color or design is necessary or desired. Since it comes in large sheets, it is quickly and easily applied over such large areas. When applied it may be left in its natural color or easily decorated, especially with a paint such as USG Texolite, which is ideal for this surface.

Has Many Advantages

Weatherwood Building Board, since its manufacture is very similar to Blendtex Tile and Plank, possesses several characteristics in common with the latter. It insulates, and thus keeps the room warmer in winter and cooler in summer. It absorbs sound and lends a similar atmosphere of quiet. It is tough and rigid, adding strength and distortion resistance to any structure on which it is applied.

Because of its insulation and structural value and its quick, economical erection, Weatherwood Building Board makes an excellent lining for attic walls.

Duplex Board

This is a strong, low-cost wallboard that comes with one surface specially treated to receive decoration easily and readily. It can be painted with a minimum of paint soaking into the board. Duplex is an ideal liner for garages.

Weatherwood Hardboard

Here is a wood fiber board compressed into extreme hardness. Carpenters like to use it in making cupboard door panels and scuff-resistant wainscots. This interesting material is dense, thin, with both surfaces smooth, so that either side takes any decoration—paint, stain, enamel or lacquer. Weatherwood Hardboard cuts to almost any size or shape and can be cut, sawed, punched, nailed or glued.

USG PAINT PRODUCTS

TEXOLITE



This living room was built of Recessed-Edge Sheetrock with Perf-a-Tape joint system. Many beautiful color combinations for rooms of this type can be achieved with Texolite.

Texolite, a modern water-thinned paint, combines the desirable qualities of color purity, high light reflection, diffusion and distribution, long life and economy. It finds usefulness in every type of interior in which people live, play or work. It is not recommended in kitchens and bathrooms which are frequently subject to excessive humidities. For all other surfaces it is ideal, suiting itself readily to modern as well as traditional interiors.

Texolite comes in ten "deep colors," ten pastel shades and white. All are popular colors. These may be intermixed to provide other shades.

Economical—Texolite provides, at low cost, interiors

that are bright, colorful, charming. One gallon covers the walls and ceiling of an average size room. Below is given approximate coverage per gallon over various types of surfaces.

Smooth, primed or painted surfaces	600 to 800 sq. ft.
Smooth finished plaster surfaces . .	500 to 700 sq. ft.
Textured surfaces	400 to 600 sq. ft.
Insulating board, fiber wallboard. .	350 to 500 sq. ft.
Cinder blocks, concrete	300 to 450 sq. ft.

Texolite is made in paste form, water only being added to make it ready for application. One gallon of paste makes one and one-half gallons of paint. Thinner cost is eliminated.

No Paint Odor, Fire-Safe

Since water is used as a thinner, it eliminates the volatile solvents which give the characteristic odor to freshly applied oil-base paints. While the fire hazard of these volatile solvents for oils is not serious except in places that cannot be properly ventilated, the use of water as a thinner obviously removes any possibility of danger.

Quick in Applying—Quick in Drying—Over ordinary surfaces no size coat is needed before applying Texolite. It is self-leveling, leaves no brush marks, large 8" brush or spray gun may be used.

Because Texolite dries in one hour and leaves no objectionable paint odor, rooms can be completed in a day's time and occupied almost immediately.

High Light Reflectivity—Light striking the surface of walls and ceilings decorated with Texolite is diffused. The result is a glareless distribution of light so essential to eye comfort and effective use of light. With this characteristic is combined high efficiency in redistributing the light received.

Most Jobs One Coat—The superior hiding ability of Texolite makes possible the painting of most surfaces with but one coat. Painting takes less time, less material is used, and as a result the cost of decorating is less.

Washability—Great strides have been made in the perfection of new and improved formulas. As a result, after the paint film has set and matured, walls and ceilings may be washed with only ordinary precautions. This is a real forward step presented in the perfection of Texolite.

Purity of Colors

Since these modern paint "vehicles" have a crystal-like transparency and do not acquire color or darken with age, they reveal the pure color of the pigments which they bind permanently to the wall or ceiling. That is why mural artists, architects and decorators are choosing modern water-thinned paints for mural paintings in railroad stations, exclusive clubs and great institutions, as well as for the finish of interior walls and ceiling surfaces in many types of buildings. They know their color schemes will remain unimpaired by the aging of the paint.

For valuable aid in choosing colors for your home, ask your dealer or write for Texolite Color Card and literature.



Because of its great covering capacity, one gallon of Texolite is sufficient for the walls and ceiling of the average room.



Texolite is without objectionable paint odor. It dries in an exceptionally short time.



Texolite reflects light in a glareless diffused manner, essential to eye comfort and efficient lighting.



Because of Texolite's great hiding quality, one coat is sufficient on most jobs.



Texolite can be safely applied over new plaster and gives good coverage on insulation board.

TEXTONE



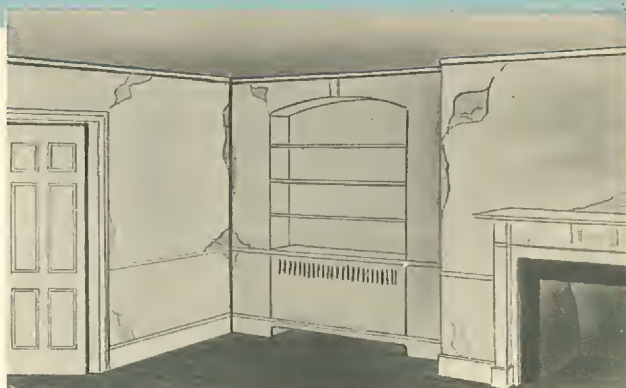
For obtaining new and interesting interior effects, Textone permits a wide range of choice.

Leading decorators recognize the textured surface as one of the most effective forms of wall decoration. They advise the use of textures for interiors where the utmost in individuality and good taste is wanted. They employ textures also because they provide attractive relief to wall surfaces otherwise flat and uninteresting. And they recommend textures for modernization work because they are unequalled in concealing wall blemishes.

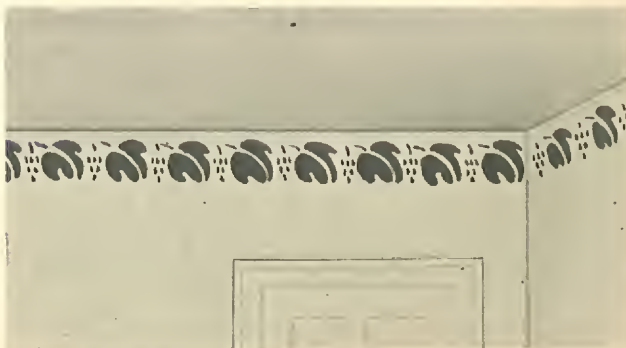
Old interiors are inexpensively modernized. Patched, cracked, unsightly walls and ceilings are effectively hidden by the beauty of fine delicate textures—simply produced with ordinary tools. Scars and mars left from remodeling are hidden, too.

The appearance of plasters, Sheetrock and other wall-boards is enhanced with Textone finish. Textone is put up in 25-lb. packages. It is mixed with water. Only a few simple tools are necessary to get the effects shown.

Textone, too, fills the popular demand in arts and craft work. It is effective in production of relief work and in stenciled patterns.



Walls and ceilings that have become patched and scarred from long usage are beautifully renewed with a coat of Textone.



Ornamental stencils and mouldings can easily be produced with Textone.

K-CEMO PRIMER



K-Cemo is an excellent primer to equalize the suction, especially on ceilings that have been patched and mended.

This new type, lime-locking primer was especially formulated for the priming of interior surfaces to prepare them for painting. It evens suction on patched and newly plastered walls. It helps to overcome imperfections not always apparent to the eye.

The Portland cement, binders and solvents in K-Cemo bond to and combine with the concrete or plaster surface to produce a hard, lime-locking prime coat. Lime is thus prevented from reaching the paint vehicle and destroying the paint film. Many types of paint can be used over K-Cemo Primer. They are oil paints, lacquers, washable calcimines, and casein paints.

K-Cemo Primer is particularly useful in preparing the following surfaces for painting: Painted and patched walls and ceilings—interior poured concrete surfaces—new or old unpainted concrete floors—fibre wallboard—Gypsum wallboard and treated joints—insulating board. K-Cemo Primer is not recommended for old concrete floors that have been previously painted. It must bond directly to clean, unpainted concrete.

K-Cemo will cover approximately 80 to 100 square feet per pound, depending upon surfaces over which it is applied and method of application.



To lock in the lime and prepare the surface for a good floor enamel, use K-Cemo over new or old unpainted concrete floors.



On many Sheetrock jobs before coating with Texolite, K-Cemo Primer provides an even, paintable base.

CEMENTICO



Cementico is excellent for decorating and weatherproofing exterior masonry surfaces.

EVERY house has exposed masonry surfaces which need color other than their natural shade—the dull gray of concrete or the unglazed color of clay tile, brick, building stone, and Portland cement stucco.

Cementico is made to order for such requirements. You can use it on the masonry walls of your basement laundry room, or on the outside of the house, to give an attractive finish to unpainted masonry.

Brilliant white or soft pastel tints of color add to the beauty of any masonry surface. You can obtain these colors—exactly the color you want—with Cementico. And it is an enduring finish, used either outside or inside.

Cementico comes in ten colors and white. Colored pigments are limeproof, assuring brilliance and long life. In addition to the ten regular colors, other shades can be obtained by tinting white Cementico with USG Limeproof colors.

It is a weatherproof, insoluble hydraulic cement paint. It comes in dry powder form and is mixed with water before application.



For damp basements that are hard to paint, Cementico will renew concrete side walls and ceilings.



For concrete garden furniture and ornamental pieces, Cementico's economy permits annual decoration.

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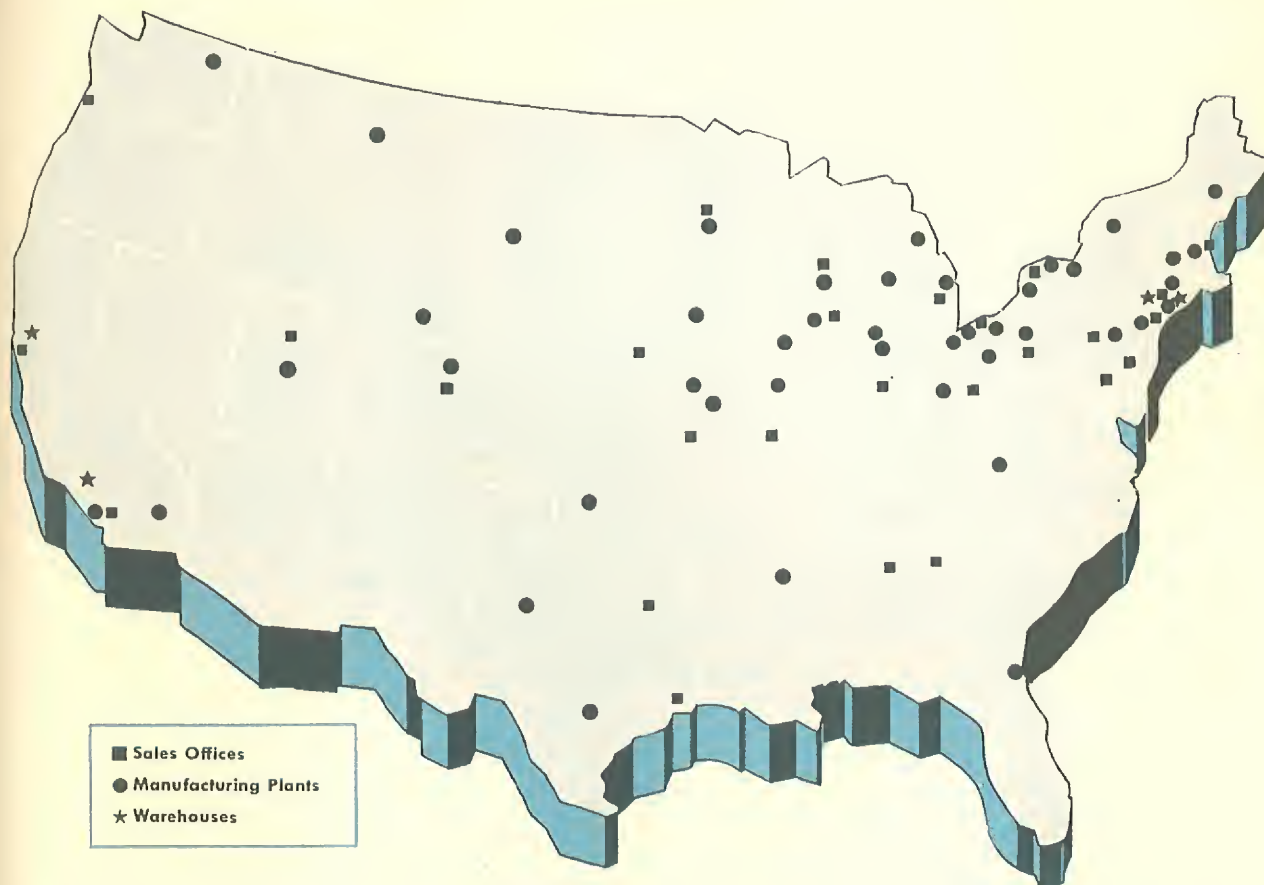
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